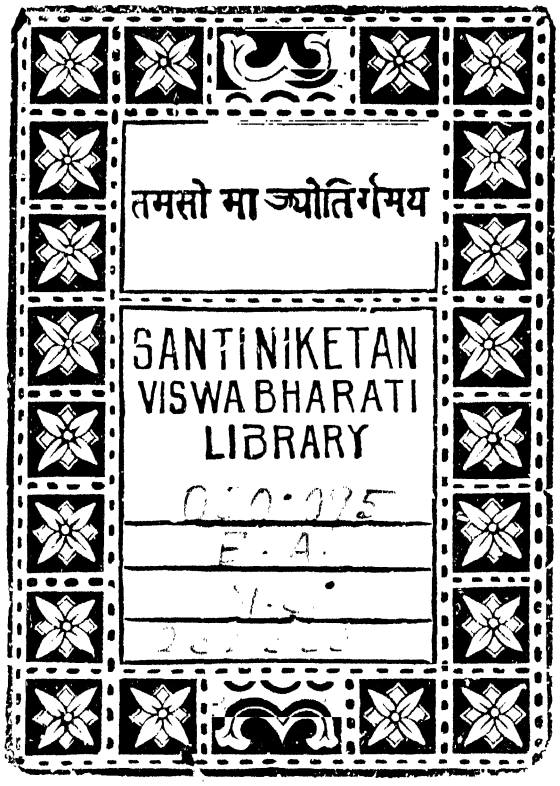

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ENCYCLOPAEDIA ASIATICA

ENCYCLOPAEDIA ASIATICA

Comprising

INDIAN SUBCONTINENT
EASTERN AND SOUTHERN ASIA

Commercial, Industrial and Scientific

By

EDWARD BALFOUR

IN NINE VOLUMES

VOL. III. CUMIN-GYROCARPUS

COSMO PUBLICATIONS
NEW DELHI INDIA

COSMO PUBLICATIONS
24-B, ANSARI ROAD, NEW DELHI-110002.

The present work was originally published with the title "Cyclopaedia of India and of Eastern and Southern Asia" in 1858 and after an edition in 1873, was completely revised in 1884. The present edition which is released with the title 'Encyclopaedia Asiatica,' is a reprint of that revised edition and contains prefaces to First, Second & Third editions, which were not available in the last edition.

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PREFACE TO THE FIRST EDITION

Whilst we find books of reference in most departments of sciences and literature in connection with European countries, daily becoming cheaper and more abundant, those who investigate and seek for information regarding the sources of British India, or any of the Scientific and economic subjects connected with Eastern Countries, still meet with much difficulty and hindrance, owing to the necessity of consulting numerous authors whose works are scarce or costly. And as some inquirers are without the pecuniary means of procuring all the requisite books and Journals, or find it impossible to procure them at any cost, whilst others want leisure or opportunity for such extensive research, it is evident that progress in these branches of knowledge would be greatly facilitated, by collecting and condensing this widely dispersed information, thereby enabling future inquirers to gain some acquaintance with the results of the investigations made by the many diligent and laborious individuals, who have devoted a great portion of their time to collecting information over the vast areas of Southern Asia.

My avocations while employed in India, more particularly in the past seven years, have rendered necessary for me a collection of books of reference relating to India and the East, somewhat more numerous and varied in character than private individuals generally possess ; whilst my employment a Secretary to the Madras Central Committees for the Great Exhibition of 1851, the Madras Exhibition of 1855, the Universal Exhibition held in 1855, in Paris, and the Madras Exhibition of 1857, combined with my duties (since 1851), as Officer in Charge of the Government Central Museums, have brought under my notice a rare variety of Eastern products and subjects of interest; and thinking that, before quitting the countries in which I have dwelt for nearly a quarter of a century, I might, with advantage leave to my successors in a portable form, the notes made on the products of the East that have come under my notice, combined with an abstract of useful information respecting these contained in my books, I have been led to show the results in the present shape.

A work of this aim and character might doubtless fully occupy the life time of several men attainments ; and this Cyclopedia of India and Eastern and Southern Asia, may therefore be regarded only as a first attempt towards the kind of book, the want of which has been long and generally felt. But although fully conscience of its incompleteness in many respects, yet, I trust it may still

be received with all imperfections and omissions, as a useful and opportune addition to Asiatic literature ; at least by those who recognize the greatness of the saying of Emmerson, that "the thing done avails, and not what is said about it; and that an "original sentence, or a step forward, is worth more than all the censors"* which may be made by such as are disposed to find fault, or who would demand in a work of this kind, a degree of perfection unattainable on a first trial.

The book is merely a novelty in form, the matter it contains being as old as our possessions in India : it is simply a compilation of the facts and scientific knowledge, which authors and inquirers have been amassing and communicating since then, to one and another and the public. But, "in our time, the higher walks of literature have been so long and so often trodden, that whatever any individual may undertake, it is scarcely possible to keep out of the foot steps of his precursors",† and this Cyclopedia. I may, therefore, avow to be put an endeavour to make generally available, in a condensed form, the information acquired by those who have in any way investigated the natural or manufactured products of Southern Asia, or have at any time made its arts or natural history the subjects of inquiry. Some of those whose writings I have made use of, have long since gone to their account, but many a labourer yet alive may find the result of his labours embodied here ; and I have done this freely, because even those whose writings I have most largely drawn, will acknowledge that the quaint old lines of Chaucer†† still apply with full force; viz. that,

"Out of the old field, as man sayeth,
Cometh all his new corn fro' year to years;
So out of old books, in good faith,
Cometh all this new Sciences that men lere"

Indeed, I have rather sought to collect and condense accurate and well ascertained facts than to present novelties; for originality is but too often unconscious or undetected limitation. Byron, years ago, remarked that all pretensions to it are ridiculous; and a wiser one than Byron has told us that "there is nothing new under the sun." But if there be nothing absolutely new in this work, I hope it may yet be found to contain much which to many was unknown before; and which for want of books, liesure, or opportunity, may have debarred them from learning.

The Cyclopedia is not intended to comprise the whole Science of Botany, nor that of Medicine or Zoology; nor to instrust in all the matters useful in Commerce or the Arts; but, whether examined for information or ammusement, the botanist, the medical practitioner, the naturalist and the merchant,

*English Traits p. 5
†Salad for the Social, p. 317
††Ibid, page 321.

may perhaps each find something in it which, from his engagements he did not know before, or though once knowing he may have again forgotten. In both cases, the work may prove useful, since old thoughts are often like old cloths; put away for a time, they become apparently new by brushing up. It would have been better perhaps, had a work of this kind been undertaken years ago, or even now were it made the joint effort of several persons : indeed, to render it in any way complete, would call for the resources at the command of a Government rather than of individuals; but we cannot have every thing at the time we wish, nor in the way we wish, and it is better to have some one undertake it and do it the best way he can, now, than to postpone it to some further indefinite period.

With a view therefore of laying a foundation as a starting point for future inquirers, I now undertake the commencement of a work, towards which I hope to receive from many quarters aid and support as I proceed : being thereby enabled either to produce future enlarged and improved editions of the work my self, placing it, as I hope, within the reach of all, or seeing that task taken up here after, by younger men, with more time and opportunities then are now before me. A dinner of fragments is often said to be best dinner, and in the same way, there are few minds that might furnish some instructions and entertainment, from their scraps, odds and ends of knowledge. Those who cannot weave a uniform web, may atleast produce a piece patchwork; and any items of information sent to me will be very acceptable.

There is another difficulty which inquirers in this country have had to meet and struggle with ; I allude to the many languages and dialects in use in India and Eastern Asia, and subsequently the variety of scientific, national, or even local names, by which the same thing is known. The only means of overcoming this difficulty was to frame a copious index of Contents; for Pope has well said that,

> "Index learning turns no student pale,
> yet holds the eel of science by the tail."

This Indexing will add to the bulk of the book, but greatly also to its value as a work of reference, and will be carefully completed.

1858 Edward Balfour

PREFACE TO THE SECOND EDITION

The first edition with its two Supplements contained 29,870 names and the work was favourably received by the public and press. But my acquintance with these countries did not permit me to regard that number as other than a foundation for an enlarged and improved edition, and this second edition will contain about 100,000 names, under which much connected with India and with Eastern and Southern Asia will be found.

I have spared neither time nor labour to make the present edition as perfect as possible, but a Cyclopedia must necessarily ever be progressive.

1871 Edward Balfour

PREFACE TO THE THIRD EDITION

THE first edition of this Cyclopædia was published in 1858 in India, the second, also in India, in 1873, and the years 1877 to 1884 inclusive have been occupied in revising it for publication in England. During this process, every likely source of further information has been examined, and many references made. I am under obligations to many learned men, to the Secretariat Officers of the Indian Governments, and to the Record and Library Officers of the India Office, Colonial Office, and British Museum, for their ready response to my applications for aid.

This edition contains 35,000 articles, and 16,000 index headings, relating to an area of 30,360,571 square kilometers (11,722,708 square miles), peopled by 704,401,171 souls. In dealing with subjects in quantities of such magnitude, oversights and points needing correction cannot but have occurred; but it is believed that errata are not many, and will be of a kind that can be readily remedied.

It is inevitable that difficulties in transliteration should be experienced, owing to the variously accented forms which some words assume even among tribes of the same race, also to the different values accepted in many languages for the same letters, and especially to the want of correspondence in the letters of the several Eastern alphabets; but in this work traditional and historical spelling has not been deviated from, and the copious Indices will guide to words of less settled orthography.

Men of the same race, habits, and customs, plants and animals of the same natural families, genera, and even species, are so widely distributed throughout the South and East of Asia, that local histories of them are fragmentary and incomplete. India in its ethnology, its flora and fauna, can therefore only be fairly dealt with by embracing a wider area. This is the reason why the Cyclopædia and my work on the Timber Trees include all Eastern and Southern Asia, the regions, the areas and populations of which may be thus indicated:—

INDIA, EASTERN AND SOUTHERN ASIA.	SQUARE KILOMETERS.	POPULATION.
Caucasus, Russian,	472,666	5,546,554
Trans-Caspian, do.	327,068	203,000
Central Asia, do.	3,017,700	5,036,000
Independent Turkoman Region,	206,500	450,000
Khiva,	57,800	700,000
Bokhara, Thignan, Karategin, etc.,	239,000	2,130,000
Arabia,	3,156,600	5,000,000
Persia,	1,647,070	7,653,000
Afghanistan and Provinces,	721,664	4,000,000
Kafiristan,	51,687	500,000
China Proper,	4,024,690	350,000,000
China Provinces,	7,531,074	21,180,000
	11,555,764	371,200,000
Corea,	256,784	8,500,000?
JAPAN AND PROVINCES,	382,447	36,357,212
British India and Feudatories,	3,774,193	252,541,210
Nepal, Bhutan,	234,000	3,300,000
French India,	508	276,649
Portuguese India,	3,355	444,987
Ceylon,	24,702	2,606,930
FURTHER INDIA—		
British Burma,	229,351	3,707,646
Manipur,	19,675	126,000
Tribes south of Assam,	65,500	200,000
Burma, Independent,	457,000	4,000,000
Siam,	726,850	5,750,000
Annam,	140,500	21,000,000
French Cochin-China,	59,456	1,597,013
Cambodia,	83,861	890,000
Malacca, Independent,	81,500	300,000
Straits Settlements,	3,742	390,000
ISLANDS—		
Andamans,	6,497	14,500
Nicobars,	1,772	5,500
Sunda Islands, Moluccas,	1,693,757	28,867,000
Philippines, Spanish Indies,	296,182	6,300,000
Netherland India,	677,038	27,154,054
New Guinea and Papuan Islands,	785,362	807,956
British Northern Borneo,	57,000	150,000
Australia,	...	2,193,200
Tasmania,	...	115,705
New Zealand,	...	489,933
Total, excluding Australia, Tasmania, and New Zealand,	30,360,571 sq.kil. 11,722,708 sq. m.	704,401,171

I am under obligations to Messrs. Morrison & Gibb for their careful press-work. All that their art could do has been done to aid me in keeping the work in a compact form.

EDWARD BALFOUR.

2 OXFORD SQUARE, HYDE PARK,
LONDON, 24*th May* 1885.

ENCYCLOPAEDIA ASIATICA

VOL. III.

CUMIN-GYROCARPUS

CUMIN SEED, Cuminum cyminum.

Kamun ; Kemun,	Arab.	Cumino ; Comino,	It., Sp.
Zira ; Jira safed,	Pers.	Jintan,	Malay.
Zee-ya ; Dze-ya,	Burm.	Cominho,	Port.
Jiraga,	Can.	Duru,	Singh.
Kummen,	Dan.	Siragum,	Tam.
Shah zira,	Dukh.	Nut-siragum,	,,
Komyn,	Dut.	Jilakarra,	Tel.
Kumin,	Ger.	Kemmum,	Turk.
Kuminon,	Gr.		

Cumin seeds, the fruits of Cuminum cyminum, are of an ash-grey or light brown colour. Taste warm, but not so agreeable as anise. It is extensively cultivated in the East, but has long been introduced into the south of Europe, Sicily, and Malta. It is found in the Sutlej valley between Rampur and Sungnam, at an elevation of 7000 to 9000 feet, and its seeds are exported to the plains. 16 cwts. of the fruit yield about 44 lbs. of the oil, which has a pale yellow colour, and is limpid, of a disagreeable smell and acrid taste ; sp. gr. 0·345. The seeds are used as a condiment in India, and the oil is used in medicine; it is a stimulant carminative. The seeds were formerly much employed as an external application in emplastrum ad cataplasma cumini, and still by Jews in the process of circumcision. The seed is particularly prized by the Mahomedans, who season their cakes with it.—*Ainslie ; Roxb. ; Royle ; Stewart ; Mason ; O'Sh.*

CUMMUM, a town in the Hyderabad dominions, where seams of coal have been struck.

CUMPAS. —? A light, brown-coloured wood of Penang, a large tree, used only for planks.

CUMRBAND. Hind. Waist-belt. Kamarbándhna means literally, to gird up the loins.

CUNDALAH PALLAH. —? A bamboo-coloured wood of Travancore, used for sandals.

CUNEIFORM CHARACTER, also called the arrow-headed, also the wedge-shaped character, was used for the Bactro-Medo-Persian language of the dynasty of the Achemenidæ. It was first observed at Be-situn, a little village at the foot of rocky mountains, which are covered with bas-reliefs. Cuneiform or wedge-like writings have been discovered on the solitary monument of Cyrus, on the Murghab, on the ruins of Persepolis, on the rocks of Be-situn, near the frontiers of Media, and on the precipice of Van in Armenia. Grotefend in 1802 ascertained that these were letters, and to be read from left to right ; but Munter, Tychsen, Burnouf, Lassen, Hinch, Oppert, Norris, Schrader, Le-Normant, the Rev. A. H. Sayce, Sir Henry Rawlinson, and George Smith, have laboured so that we now have translations, grammars, and dictionaries. Mr. A. H. Sayce, while reserving his opinion on the subject of the early connection of the Chinese and the primitive Accadian population of Chaldæa, says : 'The cuneiform characters of Babylonia and Assyria are, as is well known, degenerated hieroglyphics, like the modern Chinese characters. The original hieroglyphics were invented by the Accadians, before they descended into Babylonia from the mountains of Elam, and I have long been convinced that they were originally written in vertical columns. In no other way can I explain the fact that most of the pictures to which the cuneiform characters can be traced back, stand upon their sides. There is evidence to show that the inventors of the hieroglyphics used papyrus, or some similar vegetable substance, for writing purposes, before the alluvial plain of Babylonia furnished them with clay, and the use of such a writing material will easily account for the vertical direction in which the characters were made to run.'

The inscriptions in the Naksh-i-Rustum is a list of the Iranian nations subject to Darius ; the Persians attribute them to the chisel of their famous sculptor Farhad. A description of them is to be found in Sir John Malcolm's Persia. Enormous marble capitals of columns are to be seen at Be-situn. There are two tablets, the one containing a mutilated Greek inscription, declaring it to be the work of Gotarzes ; the other a Persipolitan sculpture, adorned with nearly 1000 lines of cuneiform writing, exhibiting the religious vows of Darius Hystaspes after his return from the destruction of Babylon, on the revolt of its udapati, Nebuchadnezzar, the pretended son of Nebunet. Both Ctesias and Isidore mention a statue and pillar of Semiramis at Baptane, but the sculptures of Semiramis and the inscription in Syriac characters have wholly disappeared. Baghistan is traditionally described as the pleasure-grounds of Semiramis. According to Sir H. Rawlinson, D'Anville first suggested the identity of Be-situn with the Baghistane of the Greeks, and there are good grounds, from the ancient notices of this place, for supposing him to be correct. Etymologically considered, the evidence is even more striking. To solve all difficulties, it may perhaps, he adds, be admitted that the sculpture did really exist in the lower part of the rock, scarped by the Assyrian queen ; and that Khusru Parvez, when he was preparing to make the scarped surface the back wall of his palace, and for that purpose began to excavate deeper in the mountain, destroyed the sculptures, and removed all further trace of them. With regard to the pillar of Semiramis, it is very curious that an oriental writer of the 15th century should describe the rock of Be-situn from his own observation, as though it were sculptured in the form of a minareh or minaret. Certainly nothing of the kind now remains. Their language is ancient Persian, before that of the Zend, which represents the Persian language previous to the time of Darius. General Ferrier says the existence of bricks with cuneiform characters among the rivers of Balkh, had been remarked by previous travellers, and, he adds, is of much interest, as no other similar relics are known so far to the east. Sir Henry Rawlinson suggests that they may belong to the Kushan (a famous Scythian race), who held Balkh in remote antiquity, and whose bricks, stamped with cuneiform Scythic legends, are also found at Susa, and on the shores of the Persian Gulf. M. Ferrier found great numbers of baked bricks, nearly three feet long and four inches thick, scattered about the citadel of Furrah, an ancient town which was plundered by Chengiz Khan. That their origin was certainly anterior to that of the town, was plainly indicated by the inscriptions upon them, in the cuneiform character. The existence of bricks with cuneiform characters at Furrah is very important, and is not mentioned by any other traveller. The size of the bricks is also remarkable. The only place where bricks of so large a size have been found, is in the kitchen of Sardanapalus, at Calah or Nimrud. Bunsen says the first cuneiform character was Median or west Iranian, and is to be distinguished from the

language of the Zend books, which is east Iranian, or Old Bactrian worn down.

Cuneiform inscriptions of Armenia, Azerbijan, and Elymais, are in Scythic or Turanian dialects. The third column of the trilingual inscriptions of the Zagrus range is also Scythic.

A clay tablet has been found at Cappadocia, relating to the gift of certain silver articles to the sun-god. The character is a peculiar kind of the cuneiform; and tablets with the same character have been found by Mr. Rassam in 1880 at Kougunjuk. From this it is supposed that Cappadocia also had a clay library. A collection of 5400 cuneiform tablets were discovered by Mr. Rassam at Sippara, near Babylon. It is supposed that these tablets are the library mentioned by Berosus, which contained antediluvian records copied from earlier documents by King Sargon I., who lived 1800 years B.C.—*Bunsen*, iii. pp. 457, 570; *Ed. Ferrier*, *Journ.* pp. 207, 393; *G. Rawlinson*, ii. p. 345.

CUNG-QUA, a resting-place for travellers, or rather for officers of Government, in Lin-Choo. The Cung-qua corresponds very nearly to the Turkish khan and the Indian sarai, except that, being used only by persons of some consideration, it is in every respect far more neat and elegant. The house resembles a private dwelling of the better class.—*American Expedition to Japan*, p. 189.

CUNNINGHAM. Four brothers of this name, sons of Allan Cunningham, sought a career in India, two of whom rose to distinction.

Cunningham, J. D., an officer of the Bengal Engineers, an extensive contributor, chiefly on archæological subjects, to the Journal of the Bengal Asiatic Society. A distinguished antiquary, statist, and geographer. Resident at Bhopal; ob. 1851. Author of Description of Kunawar, in the Bl. As. Trans. xiii. part 1, 1844; On the Ruins of Putharee, ibid., 1848, xvii. part 1, 305; On the Lingam of Bhojpur, ibid. 154; Notes on the Antiquities within the Districts of the Bhopal Agency, etc., ibid, 1847, p. 739; History of the Seikhs, Lond. 1829; Cal. Rev. No. xxii.

Cunningham, General A., of the Bengal Engineers, author of Discovery of Buddhist City of Samkassa, Lond. As. Trans. vii p. 242; Journal of a Trip through Kulu and Lahul to the Chumareri Lake, in Ladakh, Bl. As Trans. 1848, xvii. 201; Memorandum detailing the Boundary between the Territories of Maharaja Gulab Singh and British India, etc., ibid. 295; Verification of the Itinerary of Hiwen Thsang through Ariana and India, ibid. 476; Proposed Archæological Investigation, ibid. 535; Description of Ancient Gems and Seals from Bactria, the Punjaub, and India, ibid., 1841, 147; Essay on the Arian Order of Architecture, as exhibited in the Temples of Kashmir, ibid., 1848, 241; Descriptions of, and Deductions from the Consideration of, some new Bactrian Coins, ibid., 1840, ix. pp. 867, 1217; Bhilsa Topes, Lond. 1858. In the year 1871 he was appointed Superintendent of the Archæological Survey of India, and has printed annual reports; subsequently the Rev. James Burgess was appointed to the Survey of the Bombay Presidency.

Colonel Francis Cunningham, the youngest son, joined the Madras army, and almost immediately took part in the Afghan war, and was in Sale's brigade. He was one of the besieged garrison of Jalalabad.—*Dr. Buist's Catalogue*.

CUNNINGHAMIA LANCEOLATA. The lance-leaved pine. In parts of China is in great abundance; indeed, this species, and the more common Pinus Sinensis, are almost the only trees of any size which grow in some mountainous districts.—*Fortune's Wanderings*, p. 38.

CUNNINGHAMIA SINENSIS. *R. Br.*

San muh, Sha-muh, CHIN.	China pine, . . . ENG.

Grows in China and Japan, at a distance from the sea-coast. Timber valued for making coffins, flooring, furniture, house-frames. It is less liable to the attacks of insects than the Pinus Sinensis, but in damp ground is less suited for piles, particularly if exposed alternately to air and damp. Its charcoal is used for gunpowder.—*Smith.*

CUON RUTILANS. *Jerdon.* Wild dog.

Canis Dukhunensis, *Sykes.*	Cuon primævus, *Hodgson.*
C. familiaris, *var.*, *Elliot.*	
Pao-ho, ... BHOT.	Suhu-tum, . . . LEPCH.
Eram-naiko, . . GOND.	Kolsun, Kolusna, . MAHR.
Bhosa, Bhoonsa, . HIM.	Kolsa, Kolasra, . ,,
Buansa, . . . ,,	Shen nai, . . . MALEAL.
Jangli Rankutta, . HIND.	Dhole, ... SINGH.
Sonak, Bankutta, . ,,	Sidda-ki, ... TIB.
Rahnasy ,, . . . ,,	Reza kuta, . . TEL.
Sakki sarai, HYDERABAD.	Adavi kuta, . . . ,,
Rai-hun, . . KASHM.	

The Cuon rutilans is common in Ceylon, and is found over all the Peninsula, jungles of the Dekhan, and S. Mahratta country, Malabar, Neilgherries, and Assam, Burma, and the Malay Peninsula. See Dog.

CUP.

Coupe; Tasse; Gobelet, FR.	Cappa; Tazza, . . . IT.
Becher; Schlock, . GER.	Bicker, ... SC.
Piala, ... HIND.	Copa; Taza, ... SP.

Several of the drinking races of India and Asia use the cup or piala to welcome the coming guest. Colonel Tod tells us (p. 377) regarding the love of strong drink and indulgence in it to excess, so deep-rooted in the Scandinavian, Asi, and German tribes, and in which they showed their Getic origin, that the Rajput is not behind his brethren either of Scythia or Europe. Though prohibited by ordinances which govern the ordinary Hindu, the Rajput welcomes his guest with the munwar piala, or cup of request, in which they drown ancient enmities. The heroes of Odin never relished a cup of mead more than the Rajput his madhva; and the bards of Scandinavia and Rajwara are alike eloquent in the praise of the bowl, on which the Bardai exhausts every metaphor, and calls it ambrosial, immortal. The Bard, as he sips the ambrosia, in which sparkles the ruby seed of the pomegranate, rehearses the glory of the Rajput race. Even in the heaven of Indra, the Hindu warrior's paradise, akin to Valhalla, the Rajput has his cup, which is served by the Apsaras the twin sister of the celestial Hebe of Scania. 'I shall quaff full goblets amongst the gods,' says the dying Getic warrior, 'I die laughing,' are sentiments which would be appreciated by a Rajput. Cups in use with the Tibetans are made of maple knots, produced on the maple by the Balanaphora. Those in use by the ultra-Gangetic races in Burma, and the Shan States, are lacquered bamboo; those of China and Japan are of porcelain.—*Rajasthan.*

CUPANIA CANESCENS. *Pers.*

Molinæa canescens, *Roxb.*	Sapindus tetraphyllus, *Vah.*
Amba curh, ... MAHR.	

Cupania is a genus of plants belonging to the natural order Sapindaceæ. C. pentaphylla is figured in Wight's Icones; C. lævis grows in Bourbon and Mauritius; C. Madagascarensis grows in Madagascar. C. canescens is a tree of the Circars and Kandalla, and common in the Upper Ghat jungles of the Bombay side. Wood of average quality, white; not equal to Sapindus rubiginosus, and does not bear exposure.—*Drs. Roxb., Gibson, Voigt*, p. 94.

CUPANIA SAPIDA. *Cambess.* Blighia sapida, *Kon.*; a native of Guinea, cultivated in India for its fruit. It is the Akee of Africa, and was introduced into the W. Indies by Bligh.—*Voigt.*

CUPI. Tam. An article of female jewellery worn on the head.

CUPID, the Cupidon of the French; Cupido, Liebesgott of the Germans; Kama of the Hindus. Amongst the Hindu deities Kama takes the place of Cupid. Ananga is a poetical epithet of the Hindu Cupid, —literally, incorporeal, from a, privative, and Anga, a body.—*Rajasthan*, i. 255.

CUPPAS. Hind. Cotton plants; bags for cotton. Cuppasia, cotton seeds.

CUPPAY MAYNIE. Singh. A plant, according to the natives, with which cats are so enchanted that they play with it as they would with a captured mouse, throwing it into the air, watching it till it fall, and crouching to see if it will move This seems the billi-lotan, the Acalypha Indica, one of the cat-rolling plants, species of valerian, melissa, or nepeta.—*Tennant, Ceylon.*

CUPPUM. Tam. A fishing hamlet.

CUPRA, a human skull, the calvarium, in Hindi dialects pronounced cupar. The cup of the Scandinavian worshippers of Thor, the god of battle, was a human skull, that of the foe, in which they showed their thirst of blood, borrowed from the chief of the Hindu triad, Har, the god of battle, who leads his heroes in the red field of slaughter with the cupra in his hand, with which he gorges on the blood of the slain.—*Tod.*

CUPRESSUS, a genus of plants of the natural order Pinaceæ, of which there are several species. C. Australis, *Pers.*, is a tree of New Holland; C. fastigiata, *Wall.*, C. funebris *Fortune*, of China and the Himalaya; C. glauca, *Lam.*, the Goa cedar tree of the gardens of Bombay and the Dekhan, a name also applied to the C. Lusitanica, C. sempervirens, *Linn.*, C. horizontalis, the spreading cypress, a handsome species. The common cypress grows in the Himalayas, in Italy and the S.E. of Europe, and in Mexico and the southern parts of N. America. C. thuyoides is the white cedar of N. America, where its chips are used medicinally as a stomachic; and C. torulosa, *Lamb*, is the twisted cypress of the Himalaya, Bhutan, and Niti.—*Voigt; Stewart; Fortune; Riddell.*

CUPRESSUS FUNEBRIS. *Fortune.* The funereal cypress; grows in the Himalaya and in China. It is a most beautiful tree, a weeping cypress. Fortune says that it rises about sixty feet in height, having a stem as straight as the Norfolk Island pine, and weeping branches like the willow of St. Helena. Its branches grow at first at right angles to the main stem, then describe a graceful curve upwards, and bend again at their points. From these main branches others long and slender hang down perpendicularly, and give the whole tree a weeping and graceful form. Its stem is perfectly straight, like the Cryptomeria, and its leaves are formed like those of the arbor-vitæ, only more slender and graceful.—*Fortune's Tea Dist.*

CUPRESSUS GLAUCA. *Lam.*

C. Lusitanica ? | C. pendula ?

The Sarav, or Goa cedar, is a tall, elegant, and graceful tree, well adapted for border walks in a garden, being always green, and a favourite with the natives of India It grows easily, and is generally planted alternately with the areca or betel-nut tree. Slips, if taken off before the commencement of the rains, and planted in beds shaded from the sun, take root; each slip should be six inches apart, and if common care is used, one-fourth of the plants will strike and grow. After that they may be put out in nursery beds, at the distance of one foot from each other, until required for transplanting to where they are to remain. Its leaves have a singularly glaucous colour.—*Riddell.*

CUPRESSUS OBTUSA. *Von Mueller.* Retinospora obtusa, *S. and Z.*, the Hinoki of Japan, forms a great part of the forests of Nipon; attains a height of 80 feet, with a stem 5 feet in circumference. The wood is white-veined and compact, and assumes when planed a silky lustre, used for temples.

Cupressus pisifera, *Von Mueller*, Chamæcyparis pisifera, *S. and Z.*, is a very hardy tree of Japan, rising 30 feet high, stem 3 feet in diameter, of beautiful aspect and quick growth.—*Von Mueller.*

CUPRESSUS SEMPERVIRENS. *Willdc.*

Shajr ul Hyat, . . Arab.	Cypress, ... Eng.
Sarss, ... Dukh.	Saro, Sarv, Hind., Pers.

The Fruit.

Hauber, Maju-phal, Hind. | Mai-sabz, Saro-bij, Hind.

The cypress tree is a native of the warmer parts of Europe, though it has long been transferred to gardens for the sake of its deep-coloured evergreen branches and leaves. The gates of Constantinople, famous for having stood from the time of Constantine to that of Pope Eugene IV., a period of 1100 years, were of cypress wood. It is hard, elastic, and strong, resists worms, and its odour repels insects. The tree grows in the outer Himalaya up to 5000 feet, and attains a girth 6 to 8 feet, and a height of 40 to 45 feet; it also grows at Kabul, but Dr. Stewart says its wood is of no especial value there. Its fruits were formerly used in medicine, but are now obsolete. Oriental physicians used to send their patients labouring under lung diseases to breathe the air of Candia, where the cypress was abundant, in the persuasion that the emanations were particularly wholesome. The precise period or the age to which the tree lives has not been clearly ascertained. In some countries this tree is planted over the graves of the dead as an emblem of immortality.—*O'Sh.; Irvine; Eny. Cyc.; Book of Trees; Stewart; Hogg; Voigt.*

CUPRESSUS TORULOSA *D. Don.*

Deodar, . . Beas, Sutlej.	Devi dar of . . . Ravi.
Tang-shin, . . . Bhot.	Galla of . . . Sutlej.
Nawir, Near, Newar, Panj.	

This tree grows on the Ravi and Beas, on the outer hills near the Sutlej, in Kulu, in Naini Tal up to 8000 feet; and Dr. Stewart had seen a tree 120 feet high and 15 feet in girth. It grows also in Bhutan and Niti. In Naini Tal it is used for roofs. In its eastern localities, the tree is deemed sacred, and is not felled; and in Kulu images are made of its wood. It occurs in the N.W. Hima-

laya in a solitary clump at the junction of the Budhil with the Ravi, but is not found further to the west. It is found in the Sutlej valley between Rampur and Sungnam, at an elevation of 6000 to 8000 feet. The wood is hard, elastic, strong, resists worms, and its odour repels insects. Its duration is very considerable. —*Fortune's Tea Districts; Stewart; Voigt; Cleghorn, Panj. Rep.*

CURAO, also written Karao, seemingly from Karana, to cause to do, to compel, is the term given among the Jat, Gujar, Ahir, and other non-Aryan races, in N.W. Hindustan, to concubinage generally, but more especially to marriages of widows with the brother of a deceased husband. The practice, which is also known to the eastward by the name of Oorhuree, in the Dekhan of But'hee, and in other provinces by the name of Dhureecha, is followed among these races, but is not very openly confessed even among them, as some degree of discredit is supposed to attach to it. It is only younger brothers who form these connections, elder brothers being prohibited from marrying their younger brothers' widows, but among the Jat of Dehli even this is not prohibited. The practice has been common among several nations of the East. The Jews followed this custom; in Egypt it was admitted for a childless widow to cohabit with a brother of the deceased husband; and when the laws of Menu were enacted, Curao appears to have been a recognised institution. But, as is not unusual with the institutes of Menu, there is much contradiction between the enactments relating to it. From a consideration of all the passages on the subject, it appears that failure of issue was the point on which the legality turned. He who was begotten according to law on the wife of a man deceased, or impotent, or disordered, after due authority given to her, is called the lawful son of the wife (ch. ix. 176). From the fact of Draupadi marrying the five Pandu brothers, we learn that polyandry must have prevailed amongst the races of that period; and if polyandry, the practice of Curao was no doubt not uncommon; indeed, Vyasa, the compiler of the Mahabharata, was himself appointed to raise up offspring to his deceased brother. There is perhaps no circumstance which so strongly shows the northern descent of the deified heroes as this marriage. Herodotus tells us that the practice prevailed among the nomadic Scythians, as it does at present among the Bhotia. The practice is adopted also by the Nair race of Malabar, between whom and the people of the Himalaya, Wilson traces the obscure vestiges of a connection. Amongst the Jat, Gujar, and Ahir, children born Curao are considered legitimate, and are entitled to inheritance accordingly. Children begotten by the woman previous to Curao, except in the case of fraternal Curao, are known by the name of Kudhelura, and do not inherit the property of the father-in-law.—*Elliot, Sup. Gloss., quoting Recherches Phil. sur les Egyptiens et les Chinois; Selections from the Mahabharata*, pp. 8 and 66.

CURARE or Wourali of Guiana, prepared from the bark of Strychnos toxifera, *Schomb.*, a virulent poison used by the Indians to tip weapons for war and the chase.

CURB, also Kurubar, the Curumbar race. See Curumbar; Kurumbar.

CURBAN. ARAB. A sacrifice. See Kurban.

CURCULIGO, a genus of plants of the nat. ord. Amaryllaceæ, the narcissus tribe. In S.E. Asia are C. brevifolia, ensifolia, graminifolia, latifolia, Malabarica, orchioides, pauciflora, plicata, recurvata, Sumatrana. C. brevifolia is the Muslikund of Bombay.—*Roxb.* ii. p. 143.

CURCULIGO LATIFOLIA. Lambay, MALAY. A broad-leafed plant of Borneo, with a yellow flower. Its fibres are woven into a strong cloth. —*Burbidge*, p. 155.

CURCULIGO ORCHIOIDES. *Gærtn.*

Telnur mudul, . . BENG.	Nila pana, . . MALEAL.
Tamuli, ... ,,	Nilapanay kalangu, TAM.
Siah musli, . . . DUKH.	Nalla-tadi gadda, . TEL.
Nia musli, . . . HIND.	Nalla-atta gadda, . ,,

This plant grows in the Eastern Archipelago, and in all parts of India. Its tuberous and wrinkled root is in a slight degree bitter and mucilaginous to the taste, and is prescribed in electuary.—*Roxb.; Ainslie.*

CURCULIONIDÆ, a family of coleoptera. A large curculio (Rhynchophorus, *Sach.*) nearly as large as the stag-beetle of Great Britain, and called the red beetle, from a red mark on the upper part of its breast, is said to destroy the cocoanut tree. See Insects.

CURCUMA, a genus of plants of the nat. order Zingiberaceæ, growing in the south and east of Asia. The tubers of many species furnish a fecula, which is sold as East Indian arrowroot. C. angustifolia, *Roxb.*, grows in Travancore, the N. and S. Konkans, Nagpur, and Benares, and is that commonly used for the East Indian arrowroot. C. caulina, *Graham*, of the Mahabaleshwar hills, furnishes the Mahabaleshwar arrowroot. C. pseudo-montana, *Graham*, yields Ratnagherry arrowroot, and is probably Roxburgh's C. montana, and Royle's C. kushoor of Sirmore and Bissehur. C. decipiens, *Dalzell*, C. zedoaria, *Roxb.*, and C. amada, *Roxb.*, grow on the western side of peninsular India, and all yield feculæ. C. rubescens, of Bengal and Travancore, and C. leucorrhiza, are similarly used. The species known in the south and east of Asia are about forty in number,—æruginea, amada, angustifolia, aromatica, attenuata, cæsia, caulina, comosa, cordata, elata, ferruginea, grandiflora, latifolia, leucorrhiza, longa, montana, Neilgherriensis, ornata, parviflora, petiolata, plicata, pseudo-montana, reclinata, Roscoeana, rubescens, strobilina, viridiflora, xanthorrhiza, zedoaria. The particles of East India arrowroot are very unequal in size, but on the average are larger than those of West India arrowroot.—*Roxb.; O'Sh.; Voigt; Birdwood; Drury.*

CURCUMA AMADA. *Roxb.* Mango ginger.

Amada, ... BENG.	Aru kanla kachoram, TEL.
Tommon munga, MALAY.	Shadgrandika, . . ,,

A plant of Gujerat, Konkan, Bengal, and Java. The root is called mango ginger, from its peculiar smell while fresh. It is a gentle stimulant, but now only used as an article for seasoning food. Aru kanla, meaning 'six eyes,' and Shadgrandika, 'six-jointed,' are also syns. of C. caesia, and. probably refer more correctly to C. zedoaria, or 'long zedoary.'—*Roxb.; Voigt; O'Sh.*

CURCUMA ANGUSTIFOLIA. *Roxb.* i. p. 31.

Tikhur, Tikor, . . HIND.	Kua, Kogha, . MALEAL.
Kughai, . . . MALEAL.	Kua-maoo, . . . TAM.
Kuay kalung, . . ,,	

Narrow-leaved turmeric, grows wild in all the hilly parts of the centre of the Peninsula, in Central India, in the forests, extending from the banks of the Sone to Nagpur, abundantly on the Malabar coast, and is very generally cultivated. Its tubers are found at the end of fleshy fibres, which meet together, forming a crown, and they yield part of the East Indian arrowroot of commerce. The method of preparing arrowroot is substantially the same, from whichever plant it is extracted. The commercial value of the East Indian farina is very much below that of the Maranta arrowroot. It is less used as an article of diet, but is largely bought by the starch makers of London. The tubers should be planted in a good rich soil, about one foot apart, just before the rainy season, and taken up as soon as the leaves are dry. Rats, porcupines, and wild hogs are very destructive to it, both when first planted, and also when ripe. Such tubers as are required for seed should be kept in a dry place in sand.—*Roxb.; O'Sh.; Simmonds; Eng. Cyc.; M. E. J. Reports; Ainslie; Roude, MSS.*

CURCUMA AROMATICA. *Salisb.*

Curcuma zedoaria, *Roxb.* | Wild turmeric.
Bun haldi, . . . BENG. | Jungli haldi, . . HIND.

Grows in China, the islands of the Eastern Archipelago, Malabar, and Bengal, and its root is used as a perfume, and also medicinally. It possesses tonic and aromatic properties.—*Roxb.*

CURCUMA LEUCORRHIZA. *Roxb.* Tikur, HIND., BENG. Grows wild in the forests of Behar and at Bhagulpur. Arrowroot is made from its long straight roots, often a foot in length, and of a pale yellow inside, by rubbing them on a stone or beating them in a mortar, after which they are rubbed in water by the hand, and strained through a cloth; the fecula having subsided, the water is poured off, and the arrowroot dried for use.—*Roxb.; Voigt; O'Sh.; Eng. Cyc.*

CURCUMA LONGA. *Roxb.* Turmeric.

Amomum curcuma, *Gmel.*

Zirsud; Uruk us saf'r, ARAB.	Manjella kua, . MALEAL.
Haldi, . BEN., DUK., H.	Zard chobeh, . . PERS.
Arisina, ... CAN.	Karkum, . . . ,,
Kupeiros Indikos, . GR.	Haridra; Peeta, . SANSK.
Haradul, . GUJ., SINGH.	Munjal, ... TAM.
Koonhet, . . . MALAY.	Pasupu; Pampi, . TEL.

Turmeric is grown all over India and the Archipelago, frequently along the edge of fields of ginger, in the Panjab, Siwalik tract, and outer hills, from 2000 to 5500 feet, up to the Ravi at least, and occasionally beyond that. It has large whitish flowers, with a faint tinge of yellow, the tuft greenish white. In cultivating it, the ground must be rich, friable, and so high as not to be drowned in the rainy season,—such as the Bengali ryots about Calcutta call danga. It is often planted on land where sugar-cane grew the preceding year, and is deemed a meliorating crop. The soil must be well ploughed and cleared of weeds, etc., and in April and May, according as the rains begin to fall, the soil is raised into ridges 9 or 10 inches high, and 18 or 20 broad, with intervening trenches 9 or 10 inches broad. The cuttings or sets, consisting of small portions of the fresh root, are planted on the tops of the ridges, at about 18 inches or 2 feet asunder. One acre requires about from 900 such sets, and yields in December and January about 2000 lbs. weight of the fresh root. The tubers are a deep orange inside, bitter, and aromatic. The colouring matter of the dried root is bright yellow, soluble in alcohol and water, and changed to a deep red by alkalies. It is employed by the wool-dyers for compound colours of yellow, as for cheap browns and olives; as a yellow dye it is employed only in silk. In 1880-82 only 70,783 cwt. were exported from India. White paper dyed by an alcoholic tinct re of turmeric is a very sensitive test for alkalies. The root enters into many of the religious ceremonies of the Hindus. The entire, or the corners, of every new article of dress, whether of man or woman, are stained before wearing it with a paste made of the root and water. Mixed with lime, it forms the liquid used in the Arati ceremony for warding off the evil eye. Women use it largely as a cosmetic, and some smear all the body with it as a detergent. It is a mild aromatic and carminative, and is largely used as a condiment in curries; the paste is applied to foul ulcers. Clothes dyed with it are deemed a protection against fever; and the Javanese make an ointment of the pounded roots, and rub it all over their bodies as a preservative against fever. With it, in conjunction with lime-juice, the Hindus of the sect of Vishnu prepare their yellow tiroochoornum, with which they make the perpendicular mark on their foreheads.—*Ainslie; Roxb.; O'Sh.; Royle; Dr. Shortt.*

CURCUMA RUBESCENS. *Roxb.* A native of Bengal, Chittagong, Burma, and Pegu. All the parts of the plant have a pleasant aromatic smell when bruised. The root is highly aromatic. Its chief use is for the preparation of tikor, a very fine fecula, like arrowroot, which in Travancore constitutes an important article of food.—*O'Sh.*

CURCUMA ZEDOARIA. *Roscoe.* Zedoary.

C. zerumbet, *Roxb.*	Amomum zerumbet, *Kon.*
Zerambad; Zadwar, ARAB.	Katon inshi kua, MALKAL.
Mahfirfeen, . . . ,,	Jadwar-khatai, . . PERS.
Shuthi; Ban haldi, BENG.	Wal-kaha, . . . SINGH.
Karchuramu, . . ,,	Kasturi manjal, . TAM.
Tha nu wen, . . BURM.	Kapurkichili, . . ,,
Nirbisi, . CAN., DUKH.	Kichli gadda, . . TEL.
Kakhura; Kachura, HIND.	Kusthuri pasupu, . ,,
Tomon, . . . MALAY.	

A native of Bengal, Chittagong, Java, and China. This is the round zedoary, all kinds of which resemble ginger in their medicinal qualities, but are inferior to it in strength and agreeableness of flavour. Its flowers are largish, of a deep yellow, and at the top a bright crimson tuft. This plant is supposed also to yield the long zedoary of the shops; the powdered root is mixed with the powder of Cæsalpinia sepan to make the 'abir' or 'shagoo,' the red powder thrown about by Hindus in the holi festival; the root is also used medicinally.—*Roxb.; Voigt; O'Sh.*

CURDUCHIA or Kurdistan, the ancient Carduchia of Xenophon, a country which, from its strength and position, commanded all the western part of Persia. It is inhabited by nomade tribes, who, though tributary to Turkey, and professing Mahomedanism, are virtually independent. Sir John Malcolm travelled through their country in 1810, and formed the opinion that they had remained unchanged in their appearance and character for more than twenty centuries.—*Malcolm's Persia*, i. p. 105; *Chatfield's Hindustan.*

CUREA. HIND. A village, from the Arabic Karyah, assembling together, a concourse. The word is preserved in Cureat Mittoo, Cureat

Seek'hur, Cureat Dost, and Cureat Mendhoo, the names of parganas in the province of Benares.

CURIA MURIA ISLANDS, on the Mahra coast of Arabia, were ceded to the British in 1854 by the Imam of Muscat. They are only valuable for deposits of guano.

CURIOSITIES, or Curios.

Ajaibat, . Ar., Pers., H.	Curiosita, ... It.
Curiosité, Rareté, . Fr.	Curiosidad, . . . Sp.
New-gierde, . . . Ger.	

Under the general term Curios are included a great variety of articles. In China they consist chiefly of such things as please the fancy, and are for the most part procured for ornamental purposes,—vases, pots, jars, cups, images, statuettes, ornamental screens, plates, boxes of copper, iron, bronze, clay, silver, porcelain, stone, lacquer-ware, or wood of every shape, size, and variety of workmanship, rings, stands, and pedestals, lanterns, scrolls, etc. — *Morrison's Compend. Descrip.; Williams' Middle Kingdom*, ii. p. 400.

CURLEW ISLAND, a name of Kalagouk, in the Gulf of Martaban, 30 miles south of Amherst. It is 8 miles long. Cavendish Island, at its extreme south end, is half a mile in length. The greatest breadth is 1¼ mile. On its highest point, about 500 feet above the sea, are remarkable trees, a point for navigators making the coast. Alguada lighthouse was built of stones from this island. The editor visited it in 1863, and reported it as wholly unsuitable for a sanatorium.

CURMA, in Hindu mythology, the second incarnation of Vishnu in the shape of a tortoise.

CURMBOLE. Malay. A tree of the Canara forests, which grows to about 12 or 18 inches in diameter, and from 15 to 30 feet high. It is used by the natives for house-work, and is considered a useful and durable wood.—*Edye, M. and C.*

CURNUM. Tam. A village accountant.

CURRANTS.

Raisins de Corinthe, . Fr.	Passula Corinthiacea, Lat.
Korinthen, . . . Ger.	Korinka, Opock, . Rus.
Uve-passe de Corinto, It.	Pasas de Corinto, . . Sp.

The currants of commerce consist of the small dried grape, or berry, of species of vine, cultivated in the Morea, Ionian Islands, and some parts of Persia, etc. A currant, like the European red currant, called rasta, is largely eaten by the people of the Upper Panjab. Currants (zirishk), both acid and sweet, the former being the fruit of the berberry dried, and which resembles European currants, are brought from Kabul and other hill places. The zirishk currants are of two kinds, somewhat alike in appearance,—one is sweet, and grows in Kabul, etc., being a species of small-fruited vine (vitis); the other is acid, being the dried berberry. Sweet currants, basho, (Tibetan), from species of vitis, are imported from Balti. Bengal currants are the fruit of Carissa carandas.—*Faulkner; M'C. Com. Dict.; Powell, Handbook.* See Vitis.

CURRENCY NOTES in circulation throughout India have increased as under:—

1862-63, .	Rs. 4,41,94,285	1872-73,	Rs. 12,86,40,367
1863-64, . .	5,23,25,000	1876-77, . .	11,64,16,538
1864-65, . .	6,88,20,116	1879-80, . .	12,79,76,360
1865-66, . .	7,72,57,983	1880-81, . .	13,65,46,020

CURRIE, Sir FREDERICK, Bart., twice Governor of Bombay, Chairman of the Board of East India Directors, Vice-President of the India Council. He was born the 3d of February 1799. He entered the Bengal Civil Service in 1817. He became Secretary to the Government of India in 1842, and accompanied Lord Hardinge in his campaign across the Sutlej in 1845, and the following spring. He was created a baronet December 17, 1846, immediately after the battles of the Sutlej. In April 1854 he was nominated one of the Court of East India Directors, was chosen Chairman of the Company in 1858, and held that appointment until the cessation of the functions of that body, on the 1st of September 1858.

CURRY. 200 years before the Portuguese had appeared in the Indian seas, Ibn Batuta describes the natives of Ceylon as eating curry, which he calls in Arabic Conchan; in modern Arabic, Idaan is the name. In the Rajavali, also, this article of diet is mentioned as in use in Ceylon in the 2d century of this era. Nevertheless, several writers have suggested that the word has been introduced from the Portuguese. The name is probably from the Tamil word Kadai or Karai, a bazar; and Tamil children in the Peninsula sing a nursery song:

'Kai viss ammah kai viss,
Kadi ki polam kai viss.'

'Swing your hand, mother, swing your hand;
Let us go to the market, swing your hand.'

Curry in Urdu is called Salin, in Tamil Karri, in Telugu Koora, in Persian Nan-khurish. Curry is daily used in every family on the Indian seacoast, wherever the Bengali, the Tamil, Telugu, and Mahratta people have spread, and in greater or less quantity according to the means of the family, always with vegetables and with mutton or fowl, as they can afford. The ingredients are usually brought fresh from the market daily, but Europeans in India often grind and keep the dry materials in powder. There are very numerous receipts, but almost every household has one of its own, and up to the middle of the 19th century many houses prided themselves on their curries. The curry powders of India are articles of considerable commercial traffic; 32,550 cwt. of curry stuff was imported into Ceylon, chiefly from India, in 1851. The usual ingredients for curry stuffs are: aniseed, allspice, cardamom, cloves, mace, nutmeg, cinnamon, coriander, cumin seed, black pepper, mustard seed, chillies, turmeric, fenugreek, garlic, onions, ginger dry and green, poppy seed, long pepper, asafœtida, chironjie nut, turmeric, almond, cocoanut, ghi, butter, salt, tamarind, lime-juice, mango. Cocoanut milk is much used on the coast in forming the gravy to many curries, especially fish and prawns, as well as the oil fresh expressed from the nut when grated. If the curry is to be dry, the onions must be fried brown in ghi or butter, and the ingredients ground to a paste with water mixed in the same, the meat and fowl added, stirring the whole until the gravy and butter are absorbed. For a gravy curry, cut the meat or fowl into slices, put the ghi into a stewpan over the fire with the sliced onions, and dress them; then add the meat with the ground ingredients, and some water or broth; mix well together, and let the whole simmer gently until the meat is properly done. Chundu is made with meat or fowl that has been previously dressed. It is to be minced up and added to chopped onions fried in ghi, with whole red chillies, and the other curry ingredients well mixed together; the

frying is continued until the meat is perfectly brown and the gravy quite absorbed. Dr. Riddell gives the following ingredients for four curry powder receipts:—

	No. 1.	No. 2.	No. 3.	No. 4.	
Coriander seeds,	20 lbs.	12 lbs.	3 lbs	1 lb. 0 oz.	To be well roasted.
Turmeric,	4 ,,	2 ,,	1 ,,	1 ,, 2 ,,	Pounded.
Cumin seeds,	1 ,,	2 ,,	½ ,,	1 ,, 0 ,,	Dried and ground.
Fenugreek,	1 ,,	1 ,,	½ ,,	0 ,, 4 ,,	
Mustard seed,	1 ,,	1 ,,	½ ,,	...	Dried and cleaned of husks.
Ginger, dried,	2 ,,	2 ,,	½ ,,	1 ,, 0 ,,	
Black pepper,	2 ,,	1 ,,	½ ,,	... 0 ,,	
Dried chillies,	1 ,,	2 ,,	1 ,,	0 ,, 12 ,,	
Poppy seed,	2 ,,	2 ,,	1 ,,	0 ,, 12 ,,	
Garlic,	2 ,,	1 ,,	1 ,,	0 ,, 12 ,,	
Cardamoms,	2 ,,	1 ,,	1 ,,	0 ,, 8 ,,	
Cinnamon,	2 ,,	1 ,,	1 ,,	0 ,, 8 ,,	

Salt in proportion to be added when using the curry stuff. The whole to be cleaned, dried, pounded, and sifted; then properly mixed together, and put into bottles, well corked. A table-spoonful is sufficient for chicken or fowl curry. Another very simple receipt is powdered turmeric, 22 tea-spoonfuls; red dried chillies or cayenne pepper, 8 tea-spoonfuls; coriander seed, cumin seed, dried cassia leaves (tejpat), each 12 tea-spoonfuls, and mix together.—*Riddell's Domestic Economy*, p. 404; *Simmonds' Com. Prod.*

CURRYING of leather is practised among the natives of India, by the Chamar and Chuckler, by whom every operation is conducted, from the skinning of the beast to the binding of a pair of shoes. He shaves the hide or skin down with his knife, beats and rubs it with a mall, and blackens it with iron liquor, to which plantain root and conjee water are sometimes added; sometimes a little lamp-oil is used.—*Rohde, MSS.*

CURU, the founder of the race who contended with the Yadu for dominion in Hindustan, in the war famed as on Kuru-khet, which is described in the Sanskrit poem the Mahabharata. Curu had two sons, Sudina and Parikhita. The descendants of Sudina terminated with Jarasandha, whose capital was Rajagriha, the modern Rajmahal, on the Ganges, in the province of Behar. From Parikhita descended the monarchs Santana and Balica; Santana producing the rivals in the great war, Yudishtra and Duryodhana, the other the Balicaputra. Duryodhana, the successor to the throne of Curu, resided at the ancient capital Hastinapura; while the junior branch, Yudishtra, founded Indraprestha, on the Yumuna or Jumna, which name in the 8th century A.D. was changed to Dehli. The sons of Balica founded two kingdoms,—Palibothra on the Lower Ganges, and Arore, founded by Sehl on the eastern bank of the Indus.—*Tod's Rajasthan*, i. p. 42.

CURU, in Hindu cosmogony, an extensive country to the north of Su-meru, supposed to be the same as Siberia.

CURUMBAR. A race of this name are the earliest known occupants of Dravida desam, the modern Karnatic and Coromandel. They seem to have established numerous petty principalities over the whole Peninsula, which were ultimately absorbed in the Chola empire. Numerous sites attributed to this race, and still called Curumbar Cot, are to be met with. Small communities of the tribe are found to this day in the less accessible hills and forests of many parts of the Peninsula.

CUSA GRASS, Poa cynosuroides.

CUSBHARA, also written Casbhara, the designation of the artisans who work in bell-metal; from Kanso, bell-metal, and Bharna, to fill. They are also employed in fusing precious metals and making ornaments which require to be formed in moulds. They comprise one of the subdivisions of the Sonar or goldsmiths, of which, in Hindustan, the others are Muthoorea Myr, Khuttrea, Kumetlika Lahourea, Poorbea, Canoujea, Mahour, Muhamunea, Agurea, Birpoorea, Chhyncewan, Mungorea. Of these, Muthoorea ranks the highest. The Casbhara is below them all. Amongst these tribes there is a secret language, which is adopted for the purpose of concealing their fraudulent acquisition of property.—*Elliot, Supp.*

CUSCUS. HIND. Poppy seed; properly, Khash-khash.

CUSCUS ROOT.

Bala, ... DUKH.	Viratara, . . . SANSK.
Usir, ... GUJ.	Vetti vayru, . . . TAM.
Khas, ... PERS.	Curu varu, . . . TEL.

Anatherum muricatum, *Retz*, roots are used for making screens, tatties, punkahs, large fans, or covers for palanquins; and, when wetted, a very fragrant smell issues.

CUSCUTACEA, an order of twining, parasitical, leafless herbs; many species occur in the south and east of Asia,—aggregata, Arabica, australis, capitata, carinata, Chinensis, corymbosa, grandiflora, hyalena, longiflora, macrantha, pedicellata, planiflora, reflexa. They twine on various trees, and are found up to 9000 feet in the Himalaya and Afghanistan. C. longiflora is the Nilathari of Kaghan.

CUSCUTA EUROPÆA and C. Chinensis are the T'u sz-tsze of the Chinese, dodder of the English. The seeds are small and round, of the size of black mustard-seed, and are given in blenorrhœa and leucorrhœa. The young shoots are used externally as washes.—*Smith, Chin. Mat. Med.*

CUSCUTA MACRANTHA. *Don.*

Nila-thari, of JHELUM.	Amil, ... CHENAB.

Grows up to 9000 feet, up to the Indus. It is found on Populus, Salix, Spirea, Lonicera, Desmodium, Urtica, and Polygonum; and, like some of the other species, it exhales at times a very strong scent. It is eaten by cattle and goats. Edgeworth mentions that the mountaineers believe that crows pluck sprigs of this and of C. anguina, *Edg.*, to drop into water, where they become snakes, and so furnish food for themselves. Madden states that the natives promise boundless wealth to him who finds the root of it; while others, again, believe that the possession of its root will confer the gift of invisibility.—*Drs. Roxburgh, J. L. Stewart, Voigt.*

CUSCUTA PEDICELLATA. *Led.*

Amla, . . . CHENAB.	Zrand, . . . KANGRA
Kwi klapot, . KANGRA.	

This is found on the genera Morus, Leptopus, Plectranthus, Polygonum, Artemisia, etc., in Kashmir, etc., from 4000 to 5000 feet, and was got in Afghanistan by Bellew on tamarisk, Alhagi, and Peganum.—*Stewart.*

CUSCUTA PLANIFLORA. TEN. Found in fields of Kashmir lucerne, at Googaira, in Montgomery, and it is common in Lahoul and Ladakh up to 11,000 feet, growing on Carum, Artemisia, Cineraea, and A. parviflora, Solenanthus, and Perowskia.—*Stewart.*

CUSCUTA REFLEXA. *Roxb.*

C. verrucosa, *Swiet.*

Huldi-alguai-luta, BENG.	Akas-bel (sky-plant), GUJ.
T'u-sz-tsze, . . . CHIN.	Amar-bauria (undying creeper), HIND., GUJ.
Nila-tar (green thread), H.	Sitama purgonulu, . TEL.
Nira-dhar, . . . GUJ.	

A plant of British India, Panjab, Sub-Himalaya, Sylhet, Gujerat, and the Peninsula, growing on the tops of trees. It is used by alchemists, also in dyeing and in medicine. The whole leafless herb is gathered and dried; it is employed either in mixture or infusion as a laxative in fever, as an anthelmintic, and also as an alterative in cancer.

CUSH and Lava were the two elder sons of Rama, and from Cush descended the Cushwaha princes of Nirwar and Amber.—*Tod; Elliot.*

CUSH, a descendant of Hasti of the Lunar race, had four sons; one of whom, Cushnabha, whose descendants are styled the Kausika or Kusika, founded Muhadya on the Ganges, afterwards changed to Canyacubja or Canouj, which maintained its celebrity until the Mahomedan invasion of Shahab-ud-Din (A.D. 1193), when this overgrown city was laid prostrate for ever. Ferishta states it in the early ages to have been twenty-five coss (35 miles) in circumference, and that there were 30,000 shops for the sale of betel-nut only, and this in the 6th century, at which period the Rahtor dynasty, which terminated with Jye-chand in the 12th, had been in possession from the end of the 5th century. Cushamba founded a city, which he called after his own name, Causambi, and its name was in existence in the 11th century. The other sons of Cush built two capitals, Dharmarunya and Vasumuttee, but of neither have we any correct knowledge.—*Tod; Elliot.*

CUSHITE, a race of Arabs who first gave their name to a part of Arabia; they afterwards crossed the Red Sea, and settled in Ethiopia. In ancient times, the Cushite and Joktanite occupied Arabia felix, when the Ammonite and Ishmaelite dwelt in A. deserta, and the Moabite, Edomite, Nabathæan, Midianite, and Amalekite in A. petrea.

CUSTARD APPLE is the fruit of the Anona squamosa. Sour-sop is the Anona muricata. The custard apple is a favourite fruit, and its shrub grows in the Dekhan with little care. Its seed, called sherifah, disperses vermin. Flies are reported never to settle on the tree or its fruit, though ants will attack both. Bugs have a great antipathy to the leaves of the custard apple, and are said to quit a bed in which they are placed.—*Tennant's Ceylon; O'Sh.; Hooker, Him. Journ.*

CUSTOMS.

Zakat, ... GUJ.	Beya; Sambutan, MALAY.
Mahsul, ... HIND.	

Custom-House.

Douane, Cachiment, . FR.	La-dogana, ... IT.
Zoll-haus, ... GER.	Aduana, ... SP.
Thanna; Choki, . HIND.	Pabeyan, . . . MALAY.
Gumruck, . GUJ., PERS.	

CUSTURI. SANSK., TAM., TEL. Musk.

CUTCH, including the Runn, extends between lat. 22° 47′ and 24° 40′ N., and long. 68° 26′ and 71° 45′ E., and in 1871 had a population of 487,305. It is bounded to the north by the Great Runn, beyond which is the Thur or Little Desert; to the S.W. and S. by the Gulf of Cutch and the Indian Ocean; to the E. and S.E. by the district of Gujerat; and to the N.W. by the eastern branch of the Indus and Sind. Its extreme length is 180 miles, and breadth 50 miles. Its area is 6500 square miles, while that of the Runn and its islands is 9000 square miles. All between the Aravalli mountains and the Indus, from the Sutlej or Hysudrus on the north to near the sea on the south, is a waste of sand, in which are oases of different size and fertility, the greatest of which is around Jeysulmir. Cutch intervenes as a narrow strip of land between the desert and the sea, and makes a sort of bridge from Gujerat to Sind.

South of the Indus, the land becomes sandy, gradually sloping to the sea, first as a plain covered with a series of billows of sand, then as the level Runn up to the mountains of Cutch, the extent being from 500 to 600 miles in length, and varying from 70 to 150 miles in breadth, on which a considerable population dwells. The Runn itself is 150 miles from east to west, and about 40 miles broad; but there is a prolongation of the Runn towards Ahmadabad, and a very narrow line to the Gulf of Cambay. It is almost level, and a little water, from the banking up of the sea by the Sirmunur, converts it into a very shallow lake of a foot or two deep, and 40 to 60 miles broad; but in the dry season its saline sand and clay soil are hard like a slate billiard-table, and the mirage is so incessant as to deceive ordinary travellers. None but experienced guides can travel there.

The Put district, immediately north of the Runn, is less saline, and is cultivated. The district north of the Runn, extending from 500 miles up to the rivers Indus and Sutlej, is called the Tur or Thur, on which are billows or hills of sand 400 to 500 feet high above the sea-level, and 200 to 300 feet above the plain. Sir B. Frere alludes to these as of volcanic origin. The other part of Cutch is an irregularly hilly tract, completely isolated by the Runn and the sea. On the southern coast the country is a dead flat, covered with rich soil, but the northern part has three distinct ranges of hills running from east to west. The central of these ranges consists of sandstone, limestone, and slate-clay, with beds of coal; the hills north of it have numerous fossils; and those on the south, and all the face of the country near them, are covered with volcanic matter.

In 1819 Cutch was devastated by an earthquake. A dyke was thrown up, 50 miles long, 16 broad, and 18 feet high, which has been named Allah Band, the dyke of the Lord. Denodur, the largest and highest hill in Cutch, is situated near the shores of the Runn. It is an extinct volcano; its crater is still apparent, and in the north side is a large gap. It is said to have been active during the earthquake of 1819. On a level spot near the village of Wage ka Pudda are several small craters, circular spaces surrounded by basalt. And several other small basins have been blown out in the surrounding table-land, forming inverted cones about 15 or 20 feet in depth. Numerous fossils occur in the sedimentary rocks. The land at Mundavee, Moondrah, Budraseer, and other seaports, up to the Gulf of Cutch, has been gaining on the sea. Some of the creeks and inlets penetrate 6 or 7 miles from the coast, through a tract covered for miles in extent with shrubs. At low water these plants are exposed to the roots, but at high tides merely their upper branches are visible, so that the boats sail through a marine

forest, the sails and yards frequently brushing against the boughs of the trees, and the sailors have often to force their boats through the upper branches. The stems and branches are covered with crustacea and mollusca, whilst numerous waterfowl occupy the higher branches.

The Cutchi dialect of Hindi is used, but Gujeratti, Hindustani, and Persian are also known, though little used. On the death of Rao Lakhpat, his sixteen wives burnt themselves on his funeral pile, and their tombs, built in a beautiful group, stand close to the British Residency. The title of the ruler is Mirza Maha Rao, Sri Khengarji. The inhabitants of Wagad or Eastern Cutch have been notorious pirates. Sati and female infanticide were frequent. In 1868 the proportion of males to females was 1·04 to 1.

Its people are chiefly followers of the Hindu religion; and the ruling race are Jharija Rajputs, derived at a comparatively recent date from Tatta in Sind, from a common ancestor, Hunnerjee, whose son, Rao Khengar, acquired Cutch before the middle of the 16th century.

A. Rajput Grasia, viz.:—
1. Jhareja.
 a. Deda.
 b. Amur.
 c. Halla.
 d. Hothe.
2. Wagela.

B. Mahomedan Grasia, viz.:—
1. Vene.
2. Nohar.
3. Abra.
4. Mygmia, 3 tribes.
5. Nora.
6. Raoma.
7. Nangorcha.
8. Sumejah.
9. Hingorcha.
10. Modh.

C. Hindus:—
1. Bhattiah.
2. Banya.
3. Lowanna.
4. Brahman.
5. Charun.
6. Bhat.
7. Lunga.
8. Megwal.

Cultivators and Labourers.
1. Ahir.
2. Rehbari.
3. Kumhar.
4. Lowanna.

Mahomedans:
1. Khojah.
2. Melimun.
3. Meyanna.

The Jhalla are Rajputs of Sindian origin; and there are tribes of Lowanna, Ahir, and Rehbari. The Bhattiah, of Sindian origin, are a fair, handsome race, skilful and industrious mechanics, and found in all the ports of Eastern Africa, Arabia, and Western India. The Kaba is a piratical tribe in the Gulf of Cutch. The Khosa are a marauding tribe on the Thul desert between Hindustan and Sind. The ancient Cutch people were the Odomboeræ of Pliny.

There are also Brahman tribes, Soda Rajputs, Mahrattas, Bhils, Kols. The language of the hunters and tanners, the Dedh, is a dialect, but the language of Lar is purest. Iron ore occurs in various parts, but has been mined chiefly at Doodye, opposite the S.W. end of the Bunnee, where it occurs in small lumps, spongiform and friable. Coal has been found in various places, and has been used. Alum is manufactured from shale near Mhurr.—*Tr. Bo. Lit. Soc.* ii. p. 222; *M'Murdo's Cutch in* 1815; *Burnes' Bokhara; Grant, Geology; Sir Bartle Frere on the Runn of Cutch.*

CUTCH, Catechu.

Kat'h, ... Beng.	Kat'ha, ... Hind.
Shah, ... Burm.	Kachu, . . . Malay.

Cutch, catechu, gambier, and terra japonica, are commercial terms for the inspissated aqueous extracts from the wood of the Acacia catechu and from the leaves of the Uncaria gambir. A few years ago the terms were employed synonymously; but they are now, for the most part, used in trade somewhat distinctively, though not uniformly in the same sense. The catechu and gambir imported into Great Britain in 1881 was 33,011 tons.

CUTCHERRY. Anglo-Hind. An office of a revenue magistrate, a bureau, a court of justice.

CUTCH GANDAVA is the plains of Baluchistan. See Tor.

CUTCHWAHA. Prithi-raj was rao of Amber, a name now set aside by Jeypore. The twelve sons of this prince formed the existing subdivisions or clans of the modern Cutchwaha, whose political consequence dates from Humayun.—*Tod's Rajasthan*, i. p. 299.

CUTLERY. Salem and Trichinopoly afford evidence of the skill with which this description of manufacture can be carried on. At the Madras Exhibition of 1855, the daggers exhibited from the northern division exhibited in a high degree the proficiency of the operatives in that part of the Madras Presidency. Salem cutlery may compete with that of Europe.—*M. E. J. R.*

CUTTACK (Kataka, the fort), a British district in Orissa, lying between lat. 20° 1′ 50″ and 21° 10′ 10″ N., and long. 85° 35′ 45″ and 87° 3′ 30″ E., with an area of 3858 square miles, and a population in 1872 of 1,494,784. The Mahanadi river, aided by some of the large streams from the north, has formed a rich delta. From the town of Puri, containing the great temple of Jaganath, to the Dhamrah mouth, there is a deltaic tract fully 50 miles broad, and which comprises nearly the whole of the Cuttack district, great part of that of Puri, and a portion of that of Balasore. In addition to the low districts, Orissa has an enormous tract of hilly country of the interior, the population of which is partly Oorya and partly aboriginal. The people of Orissa have a language with a character peculiar to themselves. There are 18 estates known as the Cuttack Tributary Mahals, with an area of 15,000 square miles, viz. Angool, Autgarh, Autmalik, Banki, Barumba, Boad, Dhenkanal, Duspulla, Hindole, Keonjhur, Kundiaparra, Mohurbhunj, Nilghur, Nyagarh, Narsinhpur, Ranpur, Talchir, Tigeria. Angool and Banki were annexed for the misconduct of the rajas. The other sixteen tributary rajas administer civil and criminal justice, controlled by the Superintendent. The most powerful are the rajas of Mohurbhunj and Keonjhur, both of whom rendered good service during the mutinies. Cuttack has been subjected to great vicissitudes. Frightful inundations occurred in 1823 and 1831; on one occasion causing a destruction of lives estimated at 10,000, and the entire population of 300 villages is said to have been destroyed. In 1867–68, in Cuttack, Puri, and Balasore, famine raged with great intensity, and continued longest. Manbhum, Singbhum, Midnapur, Bankura, Raniganj, Bardwan, Hoogly, Howrah, Nuddea, also suffered. Mr. Ravenshaw estimated the loss in Orissa at not less than one-fourth of the population. The aboriginal tribes are Kandh, Bhumij, Kol, and Savara, the last numbering 16,589, all of them very poor. Of the Hindus, the Khasa cultivators are 156,308, the Khandait militia 254,762, the Mastane 15,526, the Goala 11,728, and Rajputs 10,728.

CUTTÆKARE, Giant's Tank in Ceylon.

CUTTEAMUNDOO is the juice of the plant

Akoo chenroodoo, or Euphorbia cattimundoo, *Elliot;* it is common in the Northern Circars, and is also called Brama Chemoodoo. At the Madras Exhibition of 1855, Mr. Elliot exhibited seven articles, basin, ewer, tumbler, etc., made of cutteemundoo gum, moulded with the hand, without any preparation. The fresh juice is used as a vesicant, and also as a cement for fastening knife handles, etc.—*M. Ex. Jur. Rep.*

CUTTLE-FISH or Squid, the Wu-tsih-yu and Meh-yu of the Chinese. The cuttle-fish inhabit all the great oceans, and abound in the warmer latitudes. They feed on crabs, squills, and molluscs, breaking down the carapace or shells of these animals with their beak-like jaws, and their strong muscular stomach completes the comminution. In 1862 one was stranded at Cook's Strait 7½ feet long, 9 feet 2 inches circumference, its head 4½ feet in diameter; its longest arms measured 25 feet, the smaller ones 12 feet long. The economic products are a deep pigment, known as Roman sepia, which in the cuttle-fish is contained in a bladder at the bottom of the abdominal sac; also the cuttle-fish sepium, or shell, or bone, called by the French Biscuit de mer. The cuttle-fish is particularly abundant on the coasts of China, and are there much used as food, as also are species of Octopus, Haliotis, Turbo, Hiphopus, Tridacna. Adams says some monodonta taste quite peppery.

Cuttle-Fish Bone.

Hai-piau siu, . . CHIN.	Samudrapu nurugu, TEL.
Darya ka kaf, . . HIND.	Sorupenka, ... ,,
Kadalnoray, . . TAM.	

In Sepia officinalis, the soft parts are supported by a firm calcareous bone, the cuttle-fish bone of the shops; and in all the naked cephalopods (not including Octhoe) now existing, some rudiment at least of a bony, horny, or cartilaginous support is to be found. Cuttle-fish bone is found on all the coasts, and is used for rubbing down paint, etc., by the painters; also for the purpose of cleaning and polishing the surface of silver and other metals. The Chinese formerly engraved these bones, or inlaid them as ornaments.—*Smith; Eng. Cyc.; Rohde's MSS.; Ains.*

CUTTONORA, the Cuttiara of Ptolemy, supposed to be either Calicut or Cochin, whence pepper was exported to Barace.—*Ind. in 15th Cent.*

CUTTY. TAM. The term applied in Southern India to the iron bloom of native manufacture.

CUTWA, a town on the Bhagirathi river, Arrian's Katadupa. Indeed, Katwadweep and Agradweep and Nabadweep all refer to a period when they must have been regular dweep or islets, to have received such names. To the vaishnava sect, Cutwa is a sacred place of pilgrimage; there, Chaitanya, flying from the roof of his parents, and leaving behind his wife, embraced the Dandi sectarianism, to shake off the obligations of society and the cares of a secular life. He was initiated into its rites by a Gosain, named Kesab Bharuty; and the hairs shaven from his head on the occasion are yet preserved in a little white temple.—*Tr. of Hind.* i. p. 49.

CUTWAL, a military police officer; the police officer of a military bazar. The word is properly Kot-wal, a fortress holder.

CUVERA, the Hindu god of riches.

CUVIER. Baron Cuvier and M. Valenciennes' Histoire Naturelle des Poissons, published in Paris in 1828 and following years, contained much information as to Indian fishes.

CYAMOPSIS PSORALOIDES. *D. C.*

Dolichos psoraloides, *Lam.*	Trigonella tetrapetala, *R.*
D. fabæformis, *Roxb.*	Lupinus trifolintus, *Cav.*
Psoralea tetragonoloba, *L.*	*Icon.*
Pai-pa-soon, . . . BURM.	Kot-avere, . . . TAM.
Guvar-phalli, . . GUJ.	Kothu-avare, . . ,,
Gouari, Gour, DUK., HIND.	Kothu-avara-kailu, TEL.
Matt-ki phalli, ,, ,,	Goru-chikudu, . . ,,

An erect annual; cultivated during the cold months in gardens for the little flat pods, which are used in curries as a substitute for French beans; grows from 2 to 3 feet high; the pods are seldom very tender, but are esteemed a good vegetable.—*Mason; Jaffrey; R. Br.*

CYATHEA, a genus of the tree-ferns, tropical plants. Many tree-ferns rise to a height of 20, 40, or even 60 feet in their native forests, supporting magnificent crowns of gigantic fronds, in some species 15 to 20 feet in length. C. spinulosa, *Wall.*, occurs in Nepal, Khassya, S. India, and Tenasserim, and in Ceylon C. sinuata, *Hook.*, and several others. C. Siamensis, of Prome, yields a whitish gum. C. Rumphii, *Miq.*, of S. India, Andamans, Burma, and Tenasserim; its wood yields a starch. The seeds of C. sphærica are ground into flour. The better known tree ferns are Cyathea aculeata, arborea, dealbata, muricata, hemitelia, horrida, and Karsteniana, Alsophila armata of the W. Indies, A. Cooperi of Queensland, and A. excelsa of Norfolk Island; also Angiopteris pruinosa and Blechnum Brasiliense. C. dealbata grows abundantly in New Zealand on the declivities of the hills, under the shade afforded by the forests. The natives use the trunk of this fern as posts in the erection of their dwellings, and they are very durable,—the medullary portion soon decaying, but the exterior lasting for several years. C. medullaris, the tree-fern of Norfolk Island, is about twenty feet in length, and presents a beautiful appearance.—*Dr. Bennett, Australasia.*

CYATHEA ARBOREA.

Aspidium arbor., *Moon.* | Æt-musana, . . SINGH.

This fern rises in Ceylon 25 to 30 feet. Its stem makes beautiful walking-sticks. The section of this tree-fern displays well the structure of an acrogenous stem, hollow in the centre, marked on the outside by the scars of the fallen leaves, and showing the elongation of the axis by junction of the petioles.—*Madras Hort. Garden; M. E. J. R.*

CYATHOCALYX ZEYLANICUS. *Champion.*

Kakalas, ... SINGH. | Eepettas, . . . SINGH.

The light lacquered Kandyan walking-sticks are said to be made from this Ceylon tree.—*Fergusson.*

CYATHULA ORBICULATA, C. capitata, and C. tomentosa, sand-binding plants of the Peninsula.

CYAXARES was the name by which the Greeks designated Vakistar, king of the Medes. In alliance with the king of Armenia, and Necho, king of Egypt, B.C. 609, took and destroyed Nineveh, and its sovereign, Assur-ibl-ili, set fire to his palace, and, with all his wives, burned himself.

CYBELE. See Osiris; Saraswati.

CYBIUM GUTTATUM. Tora-Malu, SINGH. One of the scomberoid fishes, known to Europeans as the seir fish, is the finest table fish of Ceylon. Its flesh is white, but resembles that of the salmon

in firmness and flavour. C. Commersonii, *Lacep.*, is another of the seir fish.

CYCADACEÆ, a natural order of plants, of which Lindley makes four genera and includes about fifty species. They have a simple cylindrical trunk, which increases by the development of a single terminal bud, and is covered by the scaly bases of the leaves. There are several known species of Zamia and Cycas, some of which grow in India, and in the islands of the Eastern Archipelago. They all abound in a mucilaginous nauseous juice, and the soft centres of Cycas circinalis and C. revoluta are convertible into a kind of sago. The species of Encephalartos are called Kafir bread. The seeds of Dion edule yield starch in Mexico. A similar substance, under the name of sago, is obtained from species of Zamia in the Bahamas and other West India islands; in Japan, from Cycas revoluta; and in the Moluccas and Southern India, the Cycas circinalis yields a coarse kind of flour, and also yields a transparent gum. The plants are propagated by suckers. A trunk of the order has been found in the lower greensand, Kent, and at Portland. None are now native in Europe. C. Normanbyana, *Von Mueller*, is a Queensland species; and C. sphærica, *Roxb.*, is a tree of the Moluccas. The fruit of Cycas angulata, *R. Br.*, forms a food of the Australian aborigines during a portion of the year. They cut it into thin slices, which are first dried, afterwards soaked in water, and finally packed up in sheets of tea-tree bark. In this condition it undergoes a species of fermentation, the deleterious properties of the fruit are destroyed, and a mealy substance with a musty flavour remains, which the natives of Australia probably bake into cakes. They appear also to like the fruit of the Pandanus, of which large quantities were found by Dr. Leichardt in their camps, soaking in water, contained in vessels formed of stringy bark. The tree grows 70 feet high.—*Simmonds; Von Mueller; Roxb.; Voigt; Eng. Cyc.*

CYCAS CIRCINALIS. *Linn.*

C. inermis, *Lour.*	Sayor callapa of *Rumph.*
Olus calappoides, *Rumph.*	
Buzoor butu of BOMBAY.	Madoo gass, . . SINGH.
Mudang, . . . BURM.	Paku tundu, . . SUMAT.
Ka bong, . . . MALAY.	Wara guda, . . . TEL.
Todda pana, . MALEAL.	Rana Guvva, . . ,,

This very handsome tree in appearance resembles the palm tribe. It grows in Ceylon up to 1500 feet, is common on the Malabar coast from Tellicherry to the foot of the Ghats, and occurs northwards towards Bombay; is also common in the Karen forests of Tenasserim, in Cochin-China, China, Sumatra, Java, and the Moluccas. It resembles a dwarf cocoanut tree; its blossoms are yellow. In Sumatra the cabbage and the young shoots are eaten. It yields a gum resembling tragacanth, also a kind of sago; and a flour called Indapodi is obtained by the Singhalese, by pounding the fresh kernels. These are cut in slices, and well dried in the sun before they are fit for use, otherwise when eaten they are intoxicating, and occasion vomiting and purging.—*Mason's Tenasserim; O'Sh.; Thw. Zeylan.; Marsden's Sumatra*, p. 89; *Rumphius*, i. p. 22.

CYCAS PECTINATA, *W.*, is a sago palm which grows in Sikkim, on the flats by the Ranjit streams. Its stem is ten feet high, with a beautiful crown of foliage.—*Hooker*, i. p. 151.

CYCAS REVOLUTA. *Thunb.* A native of China and Japan; a kind of starch, the Japan sago, is obtained from the cellular substance. The whole plant yields a copious mucilage, which hardens into a transparent gum. Is is the most northern member of the order of plants.—*O'Sh.*

CYCLAMEN, *sp.*, sow bread. The poisonous, acrid Hai-yu of the Chinese is dedicated to their goddess Kwan-yin.—*Smith.*

Cyclamen Europæum. *W.*

Bekhoor-miriam . ARAB.	Urtenysa, . . . ARAB.
Punjeh-miriam, . ,,	Ussul-ul-urtenysa, ,,
Shajrah-miriam, . ,,	Hathajooree, . . HIND.

CYCLAMEN PERSICUM. *Mill.* One of the Primulaceæ, a bulbous flowering plant.—*Voigt.*

CYCLAS STURCIPENNIS, a weevil of Ceylon, very destructive to agricultural produce.

CYCLE.

Cycle, Course, . . FR.	Rivoluzione, Corso, . IT.
Zirkel, Cyklus, . . GER.	Circle, Ciclo, . . . SP.

Eastern races have chronological cycles. The Chinese astronomical cycle of 60 years, in use since the 61st year of Hoang-ti, is the most ancient form of a primitive and very simple equation of luna. and solar years. Its 76th recurrence fell in 1864. The Triakon tæteridæ of the Egyptians, of 30 years, led to the cycle of 60 years. There were Indian cycles of 5 years, the result of a rude equation; the Chaldee cycle of 600 years was of later date. The 12-yearly zodiacal cycle is in use amongst the Mongol, Manchu, and Igurian Tartars, and amongst the inhabitants of Tibet, the Japanese, and the Siamese. Amongst the Tatar populations, however, this is a cycle of 60 years (12×5). The cycle of the Chaldees was of 60 years, but they had one of $60 \times 10 = 600$, which grew out of the great patriarchal year. The oldest cycle known to the Greeks was one of 9 years, which gave way to the Metonic cycle of 19 years; but one of 60 years was in use amongst the Semitic and Iranian races of primeval Asia, as well as amongst the Chinese. Plutarch considers the 60 years' cycle as the original one known to all astronomers. The Apis cycle was of 25 years; and 59 of these make up the Sothaic year of 1460 years, with 15 years over; the Phœnix cycle was 500 years.—*Bunsen.* See Chronology.

CYCLEA BURMANNI. *Arnott.*

Cocculus Burmanni, *D.C.*	Menispermum peltatum,
C. peltatus, *D.C.*	*Gart., Lam.*
Cissampelos discolor, *Wal.*	
Pada valli, . MALEAL.	Wal tjedde, . . SINGH.

This trailing shrub grows in Ceylon, Malabar, the Konkan, and Coromandel; by native practitioners the bitter root is mixed with buttermilk and cumin seeds, and given in dysentery, hemorrhoids, and flatulency, and the juice of its leaves is applied to inflamed eyes.—*Useful Plants.*

CYCLOGRAPSUS. The following species of this genus occur in S.E. Asia and Australasia:—

C. punctatus, *Edws.*, Indian Ocean.
C. Audouinii, *Edws.*, New Guinea.
C. quadridentatus, *Edws.*, New Holland.
C. sexdentatus, *Edws.*, New Zealand.
C. Gaimardii, *Edws.*, New Holland.
C. octodentatus, *Edws.*, King Island.
C. latreillii, *Edws.*, Mauritius.
C. renicilger, *Edws.*, Asiatic Seas.
C. pallipes, *Edws.*, New Holland.

CYCLONE, Hurricane, White squall, Typhoon.

Tufan, . ARAB., HIND.	Travado, ... PORT.
Ta-fung, ... CHIN.	Tornado, ... SP.

Cyclone is the term now applied to the furious tempests formerly called taifun, typhoon, or hurricane, because of their being uniformly found to be whirlwinds, and from the Arabic Touf, circumambulation. Cyclones are of frequent occurrence from 109 miles N. to 120 miles S. of Madras, and between 1746 and 1881, 17 disastrous cyclones have been recorded. The first written notice is from the pen of Colonel Capper, a Madras officer, who describes them as whirlwinds of immense size, not less in diameter than 120 miles, and having their vortex near Madras or Pulicat. Other authors have followed since that date, 1801, offering theories and explanations of the phenomena,—Redfield and Espy in America; Dr. Thom, 86th Regiment; in Mauritius, Messrs. Bousquet, Hare, and Dove, Colonel Reid, Mr. Piddington of Calcutta, and many others. But, from the data furnished by their writings, it was left for Colonel Reid to form the law by which practical action has been given, and his position has been greatly extended and made easy by the intelligent labours of Mr. Piddington. The usual names, tempest, gale, hurricane, typhoon, being calculated to lead to confusion, a new term was sought for storms coming under the new law, and the word cyclone was selected, derived from the Greek Kuklos, as neither affirming the circle to be a true one, though a circuit be complete, yet expressing sufficiently the tendency to circular motion in these meteors. Colonel Capper put forward the view that the storms of the Indian Ocean were rotatory. Mr. Redfield and Professor Dove further developed that theory; and Colonel Reid discovered the fact that the rotation of these storms in the N. hemisphere was N.W. to S.E., or opposite to the direction of motion of the hands of a watch with its face upwards, and that the reverse is the case in the S. hemisphere. Mr. Espy of Philadelphia ascertained that in cyclones there is an indraught or centripetal force; and Professor Dove explained the opposite direction of rotation in the northern and southern hemispheres, by what he called the law of gyration.

The subsequent writers on cyclones and their laws, have been Professor Taylor, Sir John Herschel, Mr. Blanford of Calcutta, Mr. Meldrum of Mauritius, and Mr. Willson. Professor Taylor's theory was that cyclones originate from an upward expansion of the air, produced by local heat; that this is followed by an indraught of air, and that the rotatory motion of the earth produces spiral movement round a centre, over which a continuous upward movement of the air takes place. This theory was adopted by Sir John Herschel in his work on meteorology. Messrs. Meldrum and Willson are of opinion that they are primarily due to lateral and opposite currents of air. Mr. Blanford ascribes their cause to a local atmospheric depression arising from condensation of vapour, and so causing an indraught of air to the place of origin. Mr. Elliot favours a modified form of Mr. Blanford's theory (Geog. Mag., June 1877). Mr. Blanford's theory is in accordance with the present views of the London Meteorological Office, viz. that the winds blow from all quarters into every central area of lowest barometrical pressure. The workers and their contributions to this subject have been numerous.

From 1839 to 1851, Henry Piddington of Calcutta contributed largely to the history of hurricanes; and it was he who discovered that in India to the north of the equator they are circular, moving from right to left, and are progressive, and he made out the tracts on which they move, and their rates. Captain Carless and Dr. Thom, 86th Foot, gave an account of the great hurricane of April 1847, in which the Cleopatra, Captain Young, was lost.

Dr. George Buist collected accounts of hurricanes on the west coasts of India from 1647 to 1859, and wrote careful memoirs on the subject of cyclones. Lieutenant Fergusson published an account of the cyclone of 1862. Mr. Franklin, at Madras, published an account of the storms of 20th October and 25th November 1846, with diagrams. Lieutenants Mullins and Hemery described the cyclone at Nellore and Cuddapah of 2d November 1847. An account of the Calcutta cyclone of 1864 was drawn up by Colonel Gastrel and Mr. H. F. Blanford, with a list of recorded storms in the Bay of Bengal, from 1737 to 1865.

Of 73 cyclones in the Bay of Bengal, notices of which occur in old records, in Mr. Piddington's works, or which Mr. H. F. Blanford himself recorded in recent years, he says the distribution in the several months were as follows:—January, 2; February, 0; March, 1; April, 5; May, 17; June, 4; July, 2; August, 2; September, 3; October, 20; November, 14; December, 3. All that occurred between November and the end of April had been restricted to the south of the bay; and the same is to be said of the greater part of the November storms. May and the first half of June, and October with the first week of November, are the only periods in which cyclones can be said to be prevalent in the north of the bay, though they occur occasionally in the intervening months, that is, during the south-west monsoon (p. 623).

Captain Taylor, R.N.R., Master Attendant at Madras, writing on the Bay of Bengal, says ships exposed to the cyclone experience, after fearful weather from one quarter, a short rest, during which the sun or stars are visible overhead, after which the storm comes on again from the opposite quarter. The wind observes in all cases the same relative bearing,—on the north side of the cyclone the wind is always east, on the east side the wind is always south, on the south side the wind is west, and on the west side the wind is north. And these storms always come up more or less from the south-east, and pass away to the north-west.

Madras city and its adjoining coast have suffered repeatedly from cyclones. They seem to travel up from the E.S.E., and progress rapidly in a W.N.W. direction, until they touch the land, and there they assume a westerly or W.S.W. course. Their diameters are about 150 miles, and they revolve in a direction contrary to the hands of a watch.

At midnight of the 2d—3d October 1746, 23 days after the surrender of Madras to M. de la Bourdonnais, a cyclone burst on this town. The ships Duc d'Orleans, Phœnix, and Lys put to sea, but foundered, and in them upwards of 1200 men were lost; the Mermaid and Advice, prizes, shared the same fate; the Achille and two other vessels of war were dismasted; and of twenty other vessels of different nations in the Madras roads, all were either wrecked or lost at sea.

A cyclone occurred off Cuddalore on the night

of the 12th—13th April 1749. It blew from the N.N.W., and continued all the next day. H.B.M. ship Pembroke was wrecked on the Colerun shoal, a little off Porto Novo, and only 12 men were saved. The Namur foundered in shoal water not far from Devicottah, when 527 officers and men were drowned. Off Fort St. David, the E.I. Company's ships Lincoln and Winchelsea, and almost all the small vessels, were lost.

On the 31st October 1752, a violent hurricane was experienced.

On the 1st January 1761, a violent hurricane occurred at Pondicherry. At that time the British were besieged by sea and land. Of eight sail of the line, two frigates, a fire-ship, and a ship with stores, the Norfolk escaped. The Panther, America, Medway, and Falmouth were dismasted, but rode out the gale; the Newcastle, Queenborough, and Protector ran ashore: and the Duc d'Aquitaine, the Sunderland, and the Duke foundered, and of the crew of 1100, all but 7 Europeans and 7 natives perished.

On the 21st October 1773, a violent hurricane visited Madras, when the ships that remained at anchor all perished.

On the 20th October 1782, a gale began from the N.W., and the following morning 100 small country vessels were stranded on the beach. H.M. ships Superb and Easter were dismasted, and got to Bombay with jury masts. At that time the ravages of Hyder Ali had driven the people into Madras, and sickness followed the cyclone, during which Lord Macartney, the Governor, nobly exerted himself to mitigate their sufferings.

On the 27th October 1797, a heavy gale occurred, in which the barometer did not fall below 29·465.

On the 5th December 1803, H.B.M. ship Centurion, on her passage from Trincomalee to Madras, and the Albatross, were dismasted in a cyclone, which raged from midnight till 5 P.M.

On the 10th December 1807, a hurricane burst over Madras, and was accompanied by a storm-wave, which inundated the whole of Black Town.

On the 2d May 1811, in a violent hurricane at Madras, the Dover frigate and Chichester store-ships were lost, and 90 vessels went down at their anchors; only two vessels which put to sea were saved. During this cyclone the surf broke in 9 fathoms water, 4 miles from shore.

On the 24th October 1818, a cyclone commenced with the wind from N., and, after increasing in violence, suddenly lulled, but as suddenly blew from the S. Its vortex passed over the town. It travelled west. The barometer fell to 28·78.

On the 9th October 1820, a cyclone commenced at N.W., and veered to W. and S.W. The barometer fell to 28·50. It passed north of Madras, and travelled west.

On the 30th October 1836, a gale set in from the north. At 4 P.M. it blew violently from the N.N.W. and N. After a half-hour's lull, it blew at 7.30 P.M. with redoubled violence from the south, and at this time the barometer was 28·285. The vortex passed over the town.

In May 1843, another hurricane occurred, the brunt of which was felt out at sea, and several vessels were lost. Those that remained at anchor rode it out.

On the 25th November 1846, a hurricane occurred during which the pressure plate of the Observatory anemometer broke at a pressure of 40 pounds registered; and the force of one heavy gust was computed at 57 pounds per square foot. The large iron wind-vane of the Observatory was bent to a right angle, and one of the flat piers on the Elphinstone Bridge was blown over.

Of these fifteen cyclones, one each occurred in January and in April, two each in May and December, and nine in October.

On the 1st November 1864, a cyclone, accompanied by a storm-wave, swept over Masulipatam, rising 12 and 13 feet above the ordinary high-water mark, and rushing inland for nine miles (in one instance for 17 miles) from the shore, submerged an area of 780 square miles, and about 30,000 of the population were drowned.

A cyclone occurred at Madras on the 2d May 1872, when nine British and 20 native ships were driven on shore, and 19 lives were lost.

A cyclone occurred at Vizagapatam on the 7th October 1876, and another at Bakarganj.

1822, 6th June, in Bombay a great tidal wave; 100,000 people perished.

A cyclone occurred at Bombay in 1837. Another on the 1st and 2d November 1854. At midnight the wind rapidly increased in force from 15 pounds pressure on a square foot of surface till 3 A.M. of the 2d November, when it inclined a little more to the south, and increased in pressure to 35 pounds.

Amongst the calamities that have overtaken the Sunderbuns, have been great inundations caused by cyclones. About the year 1584, the tract lying between the Horinghatta and the Ganges, known as the Bakarganj or Burrisal district, was swept by an inundation, succeeded immediately afterwards by an incursion of Portuguese and Mugh pirates. In June 1622, this same tract was again inundated, 10,000 inhabitants perishing, and many houses and much property destroyed.

In the Gentleman's Magazine for 1737, mention is made of a storm and inundation at Calcutta, from which 300,000 lives were lost. In A.D. 1736 the Megna rose six feet above its usual level at Luckipur. A cyclone of 1831, over Calcutta, swept away 300 villages and 11,000 people. Occurrences of cyclones have been recorded at the mouth of the Megna on the 6th and 9th June 1822, on the 1st November 1867? on the 16th May 1869, and 1st November 1876.

In A.D. 1833, Saugor Island was submerged 10 feet; the whole of the population, between 3000 and 4000 souls, together with some of the European superintendents, perished; at Kedgeree, a building 18 feet high was completely submerged, and the Duke of York East Indiaman was thrown high and dry in the rice-fields near Fultah in the Hoogly. In A.D. 1848, the island of Sundeep was submerged. A cyclone is mentioned as occurring in Calcutta in 1859, attended with a great loss of life. A cyclone of the night of the 5th October 1864 came from the sea, passed over Calcutta, and foundered and stranded steamers and ships of 2000 tons burden, and swept away every tree and building in a tract 300 miles long. This one, originating near the Andamans, travelled in a north-west direction, and struck the coast of Bengal at the Balasore roads and Hidgeli. Thence it passed over Calcutta on the 5th October, over Kishnaghur and the Bogra district, and finally expended its strength in the Garo Hills. The wind destroyed much, but it brought with it

a storm-wave 30 feet high, which flooded the country for a distance of 8 miles on both sides of the Hoogly river. In Calcutta, and in Howrah, on the right bank of the Hoogly, the partial or complete destruction of 196,481 houses and huts told a sadder tale than even the violent death of human beings. But widespread ruin swept over the fertile tracts of Midnapur, and over the Sunderbuns, which had been recovered from total inundation by the efforts of a quarter of a century, and the expenditure of millions of rupees. In many districts there, no less than three-fourths of the whole population, their cattle and other property, were engulfed in sudden destruction. Had the Hoogly been the Thames, and London—not so densely populated—Calcutta, a cry would have gone up which would have thrown the earthquake of Lisbon and similar catastrophes, famous in history, into the shade. In all, about 200 ships were lost, and 70,000 persons perished.

The inhabitants of the large fertile islands in the estuary of the Megna, Shahbazpur, Hattiah, and Sundeep, full of rice grounds and cocoanut grooves, are not unfamiliar with the dangers of their marshy home, for since 1822 there have been at least seven cyclones; but the islands stand fairly high above the water, and it has been the storm which has caused most damage, though it generally gives notice of its approach long beforehand, by the unnatural hush in the air, and the livid colour of the sky, but on the night of the 31st October 1876 there was no warning. A violent north wind prevailed from 10 P.M. of the 31st October to 3 A.M. of the 1st November, and brought down the river water more rapidly than usual. The tidal wave was unusually high, and the north wind was followed by S.W. and west winds, which propelled the storm-wave into the converging water area of the estuary. It was full moon on the 31st October, and the usual tidal bore occurred at 11 P.M.; and before the water flowed off, one or two storm-waves followed from the S.W. about 3 A.M., and between 4 and 5 A.M., causing a second and third inundation, covering the islands with from 10 to 45 feet of water. The waters continued to rise till 4 A.M., when they began to subside. The inundation caused bad food and bad water. It was shown that 165,000 people were drowned, and subsequently 75,000 died of cholera. South of the equator, they occur in the months of November to May, and travel to the W.S.W.; and afterwards, but not always, to the southward and S.E., the wind invariably moving round a central space (which is usually characterized by a calm) from left to right, or with the hands of a watch; while the storm, which has a diameter of 1 to 1500 miles, moves onwards at the rate of 1 to 20 miles, but more frequently 4 to 7 miles an hour, for a period varying from a few hours to ten days, attended with torrents of rain, and its northern half often with lightning. Dr. Thom showed that, south of the equator, these rotatory storms are always generated between the N.W. monsoon and S.E. trade wind. They occur only during the S.W. monsoon months, and their rise and progress are intimately connected with the S.E. trade wind and N.W. monsoon, two opposing winds. With ships, the safest course is to lie to and watch the barometer and wind till the bearing of the centre be known with some certainty.—*Geog. Mag.*, June 1877; *Buist's Catal.; Curiosities of Science; Cal. Review*, 1868; *Capper's Trade Winds and Monsoons; Piddington on the Law of Storms; E. India Marine Surveys; Imp. Gaz.; Bikmore's Travels; Maury's Physical Geog.; Mr. Meldrum in Pro. Brit. Assoc.* 1867; *Lieut.-Col. Reid, The Progress of the Development of the Law of Storms*, London, 1849; *Alexander Thom, An Inquiry into the Nature and Course of Storms in the S. Indian Ocean; Gazetteer of S. India*, p. 191; *Moral and Mat. Prog.*

CYCLOPES are supposed by Pococke to be the Gucla-pes from the Jumna or Guckla-dea. This derivation would designate them as a pastoral race, from Go, SANSK., a cow; but their great irrigation works denote them an agricultural population. Such a race at some remote time occupied Baluchistan, and raised great irrigation structures similar to those in Greece, and in the Peninsula of India. At Bodegli is a mound with Cyclopean substructures. Lieutenant Aytoun, in his Geological Report on a portion of the Belgaum Collectorate, given in Carter's Geological Papers on Western India, p. 392, mentions that certain gorges in the hills had been artificially bunded, and present one or two points of slight resemblance between the Pelasgi, the builders of the Cyclopean walls of Greece, Italy, etc., and the Ghorbasta builders of Baluchistan, suggesting that they might have been a kindred people, with kindred habits. The Pelasgi came from Asia, not from Asia Minor, not from Syria, not from Assyria, not from Persia, but probably from that birthplace of emigration, the tract north and north-east of Persia.

The Ghorbasta builders probably came from the same tract, and were not Mekranees, nor Persians, nor Assyrians. The Pelasgi existed only a few generations in Greece (about 250 years), before they were turned out by the Hellenes; they must therefore have brought with them, when they entered the country, their propensity for building massive walls, and commenced their work almost immediately on arrival. It was probably the same with the wall builders of Baluchistan; they only remained in the country long enough to allow them to extend northward as far as Kelat, when, meeting with the Mulla pass, they debouched into the plains. Their art was a fully developed one before they arrived there to carry it out. The Pelasgi arrived in Greece about 1800 B.C. This date seems to accord roughly with the advent of the unknown Ghorbasta into Jhalawan. The Ghorbasta structures, however, when compared with the Cyclopean remains of Greece, are slight, most roughly executed and insignificant; yet they evince a like instinct and habit in two races which probably came originally from the same region. The tank at Cumbum, the Husain-Saugur tank at Secunderabad, the Oossoor lake or tank near Bangalore, are each about 7 miles in circumference. Their date is not known. The Mir Alam lake at Hyderabad, constructed during a famine to provide food, cost £130,000, and has a steamer on it; and a great lake, formed in a famine by the damming up of the Goomti river, cost £1,500,000.—*Dr. Cook in* No. 6, *Bombay Med. Transactions.*

CYCLOSTEMON MACROPHYLLUS. *Bl.*

C. Zeylanicum, *Bailley.* | Sphragidia Zeylanica, *Thw.*

This large tree is very common in the dense moist forests of the Animallays, 2000 to 4000 feet

elevation; and in Coorg at the waterfalls near Mercara, 4000 feet; and in other parts of the Western Ghats, Travancore, etc. It is found also in Ceylon at 5000 feet, and Java. Indian specimens (Var. B. sessiliflora) have the flowers sessile; the timber is very hard.—*Thwaites; Beddome.*

CYDONIA JAPONICA. *Pers.*

Hai-hung, Hai-t'ang-li, Hai-t'ang pu, CHIN.

The Cydonia genus of plants belongs to the natural order Pomeæ. C. Japonica is a beautiful flowering tree, originally from Sin-lo on the Yellow Sea, now largely cultivated in China; and Szechuen produces fine sorts, one variety being called Ts'iu-hai-t'ang.

CYDONIA VULGARIS. *Pers.* Quince.

Pyrus cydonia, *Linn.* | Pyrus tomentosa, *Roxb.*
Safarjal, . . . ARAB. | Bihi, . . HIND., PERS.

This small, crooked, and much branched tree grows in the south of Europe, in Persia, Afghanistan, Kashmir, in the N.W. Himalaya, in Hindustan, and is cultivated from Kābul to Kashmir. Flowers few, of a white or rose colour. The fruit is of a yellow colour, downy, and remarkable for its fine odour. The seeds, called Bihi-dana, are in great use medicinally, being brought into India from Persia, Kābul, Kandahar, and Kashmir, and are highly valued as a demulcent tonic. The fruit contains some astringent matter. It is now made into a preserve, or used for flavouring the preserves of other fruits. There is a 'tursh' or bitter, and a 'shirin' or sweet quince.—*Dr. Royle; O'Sh.; Roxb.; Voigt; Stewart; Cleghorn.*

CYGNIDÆ, the swan family of birds. Cygnus olor is the mute swan, of which C. immutabilis is the wild race. Cygnus musicus is the Cygnus ferus, or Hooper swan, and is found in N. Europe, Asia, and N. Africa. It is migratory, and one specimen was obtained in the valley of Nepal.

CYMBIDIUM, a genus of plants belonging to the Orchiaceæ, all of them with beautiful flowers.

C. alatum, *Roxb.*, of Sunderbuns and Chittagong, has pale sulphur flowers.
C. aloifolium, *Swtz.*, the Paras, the Epidendron aloifolium, *L.*, Aerides Borassii, *Sim.* Flowers large dull purple, white-edged, on most of the hills of India; a beautiful plant when in flower, and blossoms in April.
C. aphyllum, *Swz.*, the Limodorum aphyllum, *Roxb.*, with yellow flowers; Coromandel coast.
C. giganteum, *Wall.*, the Limodorum longifolium, *Buch.*, grows on the Khassya and Nepal hills.
C. pendulum, *Swz.*, the C. crassifolium, *Wall.*, and the Epidendrum pendulum, *Roxb.*, grows in the Khassya hills, and in the Peninsula of India.
C. triste, *Willde*, grows from Nepal and Ceylon to Japan and N. Caledonia, has small pale green flowers. It is the Epidendrum teres of *Thunb.*, E. triste, *Forst.*, and Linsia teretifolia, *Gaudichaud.*
C. lancifolium, *Hooker*, grows in Nepal; and C. Gibsonii, *Wall.*, C. inconspicuum, *Wall.*, C. Masterii, *Wall.*, and C. striatum, *Wall.*, grow on the Khassya hills. Wight also gives C. erectum, C. tenuifolium, and C. tessceloides.

CYMBIRHYNCHUS MACRORHYNCHUS, called by the Malays the rain bird, is the most beautiful of the Malacca birds, and is known to naturalists as the blue-billed gaper.—*Wallace.*

CYMBOPOGON LANIGER. *Desf.*

Khawi; Panni, . PANJ. | Injani, ... PANJ.
Solara, ... | Bur . . of HARRIDANA.

Root Sheaths.

Azkhar; Mirchiagand, H. | Lamjak katran, . HIND.

Dr. Stewart says (p. 253) this and C. iwarancusa are not uncommon in many parts of the plains.

CYNANCHUM (from κύων, a dog, and ἄγχω, to strangle), a genus of plants belonging to the natural order Asclepiadaceæ. The species are herbs or undershrubs, with opposite leaves and mostly twining stems. Dr. Wight gives C. alatum, callialata, pauciflorum. The Populus Euphratica, a species of Cynanchum, Chloris barbata, and Cyperus aristatus, all ascend to 11,000 feet in Ladakh. Peganum harmala attains 9000 feet. The leaves of C. argel of Upper Egypt in small doses are purgative, and they are much used in Egypt for adulterating senna. C. ovalifolium of Penang yields abundance of very fine caoutchouc. —*O'Sh.* p. 51; *Eng. Cyc.* p. 275.

CYNARA CARDUNCULUS. *Linn.* The cardoon; is similar to the garden artichoke, but grows much higher, though cultivated similarly to the artichoke.

CYNARA SCOLYMUS. *Linn.* Artichoke.

Kirshuf, Kharsjuf, . ARAB. | Kanjir, . . HIND., PERS.

The artichoke has very large flowers, of a violet blue colour, and is grown in many gardens of the Dekhan.

CYNIPS, gall-producing insects, puncture and lay their eggs in large numbers in the fruits, seeds, and leaves of plants, and the excrescences are known as galls. A species on the Himalaya affects the oak.

CYNOCEPHALUS. *Cuv.* A genus of quadrumanous mammals, known as baboons, meaning in the Greek dog-headed. Its most marked characters consist in the great prolongation of the face and jaws, and in the truncated form of the muzzle, which give the whole head a close resemblance to that of a large dog. In their native mountains, the ordinary food of the baboons is berries and bulbous roots; but in the vicinity of human habitations they make incursions into the cultivated fields and gardens, and destroy a still greater quantity of grain and fruits than they carry away with them. C. hamadryas, *Linn.*, the derrias, is found in Africa and Arabia. It measures upwards of 4 feet when standing erect.

CYNOCTONUM PAUCIFLORUM. *Dec.*

Cynanchum pauciflorum, *R. Br.*

Chagul-pati, . . BENG. | Kang-koombala, . SINGH.

Very common in the central province of Ceylon and India. The Singhalese eat the young leaves of this and of many other plants of this natural family, in their curries.—*Thw. Zeyl.* p. 195.

CYNODON DACTYLON. *Pers.*

Panicum dactylon, *Linn.* | Agrostis linearis, *Retz.*
Durbha, . BENG., HIND. | Hurrum pillu, . . TAM.
Doob, Doobla, ,, ,, | Arugam pilu, . . ,,
Hariali, Durva, . DUKH. | Garika kasuvu, . TEL.
Ghaner, ... HIND. | Tella gariki, . . ,,
Khabal, Khabbar, PANJ. | Barawa, . . . TE.-IND.
Durva, ... SANSK.

The Harryallee grass of India and Europe is considered, in India, the best for cattle. The root creeps through the loose soil to a considerable extent, and has strong fibres at the nodes. The stem rarely exceeds six inches in height. Florets are all on one side of the spike-stalk, awnless, purplish, and ranged in two close alternate rows. All the stems which lie near the ground take root, and by this means, though an annual plant, it increases and spreads very wide. It yields abundance of seed, of which small birds are very fond.

It is grown for hay; and it is good to allow the seed to ripen before the hay is cut, as it then propagates itself by seed, in addition to the runners. This grass is found in Great Britain, but its produce and nutritive properties are there comparatively insignificant, while in India it constitutes three-fourths of the pasture. Sir W. Jones observes (As. Res. iv. p. 242) that it is the sweetest and most nutritious pasture for cattle, and its usefulness, added to its beauty, induced the Hindus, in their earliest ages, to personify it as the mansion of a benevolent nymph. The A't'harvana Veda thus celebrates it: 'My Durva, which rose from the water of life, which has a hundred roots and a hundred stems, efface a hundred of my sins, and prolong my existence on earth a hundred years.'

It is the principal one of the Indian grasses, and is perhaps the most generally diffused, possessing much nourishing property in its long stems, no less than in its leaves. It endures the greatest elevation of temperature, as its roots penetrate far below the surface; and although, during the dry hot season, giving no sign of life, it puts forth its tender leaves on the first approach of the rains. It grows throughout the year, and lawns and pastures of moderate extent are made by planting pieces of the creeping stems. It is also much used for forming a covering for the banks of rivers, ramparts, and esplanades. The young and tender leaves are used in chatnis, and are considered very pleasant; the roots make a cooling drink. It is also one of the most abundant grasses on the Tenasserim coast, but it is much less conspicuous than many others.—*Mason; Cleghorn; Jaffrey; Von Mueller.*

CYNOGALE BENNETTI, a rare otter-like animal of Borneo. It has a very broad muzzle, clothed with long hairs.—*Wall.* i. 39.

CYNOGLOSSUM, a genus of the borage tribe of plants, growing in Bengal and Northern India. C. diffusum, canescens, Falconerianum, furcatum, marifolium, and racemosum, pretty little annuals, flowers mostly blue, purple, white and purple; grow in any common soil.—*Riddell; Roxb.*

CYNOGLOSSUS LINGUA. *B. Ham.* The sole.

CYNOMETRA BIJUGA. *Spanoglic.* A timber tree of the Sunderbuns.

CYNOMETRA RAMIFLORA. *Linn.*

Cyn. cauliflora, *Wall.* | Iripa, ... MALEAL.
Nam-nam, . . MALAY. | Galmædora gass, SINGH.

A tree which attains a height of 60 feet in Ceylon, Malabar, Java, the Moluccas, and Sumatra. A cubic foot when seasoned weighs 56 lbs., and it is said to last from 15 to 60 years; sp. gr. ·896. It is used for bridges and buildings, and is the best suited of the Ceylon woods for under-ground purposes. Its roots, leaves, and an oil from the seeds are used medicinally. Chips of the wood infused in water give a dark purple dye.—*Mr. Mendis, Useful Plants; Thwaites; Beddome.*

CYNOMETRA TRAVANCORIA. *Bedd.* This is a straight tree of great height and very beautiful foliage, particularly when in young leaf. It grows on the Tinnevelly and Travancore mountains at 2000 to 3000 feet elevation.—*Beddome.*

CYNOMORIACEÆ, *Lindl.*, an order of leafless parasitic plants. Wallich says a species of the Cynomorium, a fungus-like genus, is parasitical on the roots of trees in the Tenasserim Provinces, and valuable as a styptic.—*Mason.*

CYNOPITHECUS NIGRESCENS, the black baboon monkey of Celebes.

CYPERACEÆ, the sedge tribe, a natural order of plants, found from the arctic to the antarctic circle, in marshes, ditches, and running streams, in meadows, on heaths, in groves and forests, on the sea-shore, and on mountain summits, wherever phænogamorous plants can exist. In Griffiths' Herbarium are 345 species of Indian Cyperaceæ, collected from the Himalaya to Mergui. The most useful of the tribe are species of Cyperus, Euphorium, and Papyrus, *q.v.*

A. Cypereæ.

Cyperus alopecuroides, *Rottler*, Himalaya.
angustifolius, *Buch.*, Bengal.
aristatus, *Rottler*, Peninsula of India, Bengal.
articulatus, *Linn.*, Peninsula of India, Bengal.
bulbosus, *Vahl.*, Coromandel.
canescens, *Vahl.*, Peninsula of India.
casteneus, *Willd.*, Peninsula of India, Bengal.
compressus, *Linn.*, W. and E. Indies, Penin., Beng.
corymbosa, *Roxb.*
difformis, *Linn.*, Greece, Egypt, S. Asia, the Behoea.
distans, *Linn.*, W. and E. Indies, P. of India, W. Africa.
dubius, *Rottler*, P. of Ind., Ben., ch'hoto gothoohee.
exaltatus, *Retz*, Peninsula of India, Bengal.
haspan, *Rottler*, Peninsula of India.
hexastachyus, *Rottler*, Arabia, East Indies.
inundatus, *Roxb.*, P. of Ind., Bengal, patoe.
iria, *Linn.*, P. of Ind., Beng., Nepal, China, Manilla.
niveus, *Retz*, Bengal, Monghir, Kamaon.
pectiniformis, *Rom.*, Coromandel.
pertennus, *Roxb.*, Bengal, the nagur-moothi.
pleuranthus, *Nees*, Coromandel.
polystachyus, *Rottler*, Peninsula of India, Australia.
procerus, *Roxb.*, Peninsula of India.
pulvinatus, *Nees*, Peninsula of India, Bengal.
pumilus, *Linn.*, Peninsula of India, Bengal.
pygmæeus, *Vahl.*, P. of Ind., Beng., Ava, the jal-muti.
racemosus, *Retz*, Penin. of India, Bengal, Penang.
Roxburghii, *Nees*, Peninsula of India, Bengal.
sanguinolentus, *Vahl.*, Konkan, Bengal, Nepal.
seminudus, *Roxb.*, Bengal.
tenuiflorus, *Rottler*, Peninsula of India.
tortuosus, *Roxb.*, Circars.
venustus, *R. Brown*, Pen. of Ind., Australia, Java.
verticillatus, *Roxb.*, Pen. of Ind., Bengal, Nepal.
Papyrus dehiscens, *Nees*, P. of Ind., Beng., Chumatee-patee.
elatus, *Nees*, Ceylon.
pangorei, *Nees*, P. of Ind., Beng., mador katee.
tegetiformis, *Arnott*, Bengal.
Mariscus cyperinus, *Vahl.*, Ascension, Mauritius, China, Bengal.
dilutus, *Nees*, Peninsula of India, Bengal.
Kyllingia monocephala, *Linn.*, E. Indies, China, Nepal, Archipelago, Australia.
triceps, *L.*, Pen. of India and Malacca, Bengal.
Courtoisia cyperoides, *Nees*, Peninsula of India.

B. Hypolytreæ, *Nees.*

Anosporum monocephalum, *Nees*, Beng., gothoobee.

C. Scirpeæ, *Nees.*

Abildgaardia Rottbolliana, *Nees*, Pen. of India, Bengal.
tristachya, *Vahl.*, Peninsula of India.
Fimbristylis æstivalis, *Vahl.*, Pen. of India, Bengal.
argentea, *Vahl.*, Peninsula of India.
ferruginea, *Vahl.*, Bengal.
pallescens, *Nees*, Bengal.
Royleniana, *Nees*, Sunderbuns, Bengal; the talnoorco is the variety microstachya.
Schœnoides, *Vahl.*, P. of Ind., Beng., keshuri-mulunga.
Trichelostylis autumnalis, var. Indica, *Roxb.*, Bengal; the kuratiya-yuvanee.
complanata, *Nees.*
miliacea, *Ness*, Bengal, the buro-yuvanee.
quinquangularis, *Nees*, Bengal.
tenella, *Nees*, Peninsula of India, Bengal.
tetragona, *Nees*, Bengal.

Isolepis articulata, *Nees*, Bengal.
barbata, *R. Br.*, Peninsula of India.
incurvata, *Nees*, Bengal.
prolongata, *Necs*, Bengal.
setacea, *R. Br.*, Europe, Bengal, Australia.
squarrosa, *Vahl.*, Bengal, the chhoonchoo-moormoori.
supina, *R. Br.*, Bengal, Nepal, Australia.
Hymenochæte grossa, *Nees*, Bengal.
Scirpus junciformis, *Nees*, Bengal.
kysoor, *Roxb.*, Bengal.
Eleogenus capitatus, *Nees*, Rio Janeiro, Pen. of India, Bengal, New Holland.
Limnochloa acutangula, *Nees*, Peninsula of India.
Plantaginea, *Nees*, Ceylon, Peninsula of India.
tumida, *Nees*, Bengal, Peninsula of India.

D. Scleriæ, *Nees.*

Scleria lithosperma. *Willd.*, Ceylon, Pen. of India.
tesselata, *Willd.*, Ceylon, Pen. of India, Nepal.

E. Cariceæ, *Nees.* Several species of Carex have been introduced into India.

Carex Indica, *Willd.*, Nepal.
Uncinia Nepalensis, *Nees*, Himalaya.
Remirea Wightiana, *Wall.*, Peninsula of India.
Hemicarpha isolepis, *Nees*, Peninsula of India.
Lipocarpha lævigata, *Nees*, Peninsula of India.
triceps, *Nees*, Coromandel.
Hypolytrum giganteum, *Wall.*, both Pens. of India.
Fuirena ciliaris, *Roxb.*, Coromandel.
pentagona, *W. and A.*, Peninsula of India.
dichostylis Micheliana, *Nees*, Nepal, Europe, Asia Minor.
Chætocyperus limnocharis, *Nees*, Coromandel.
Echinolytrum dipsaceum, *Desv.*, Peninsula of India.
Malacochæte pectinata, *Nees*, Peninsula of India.
Eriophorum arundinaceum, *Wall.*, Penang.
comosum, *Wall.*, Nepal.
Rhynchospora Chinensis, *Nees*, China, Nepal.
Morisia Wallichii, *Nees*, Nepal.
Haplostylis Meyenii, *Nees*, China, Ceylon.
Cephaloschænus articulatus, *Nees*, Pen. of India.
Hypoporum pergracile, *Nees*, Sylhet.
Corbesia laxa, *Nees*, Nepal.
Trilepis Royleana, *Nees*, Himalaya.

CYPERUS BULBOSUS. *Vahl.*

C. jemenicus, *Roxb.*	C. capitatus, *Retz.*
C. geminatus, *Ainslie.*	
Shilandi arisi, . . TAM.	Puridampa, . . . TEL.
Purigaddi, . . . TEL.	

This plant grows on the Coromandel coast near the sea; its roots are used as flour in times of scarcity, and they are also eaten roasted or boiled. Dr. James Anderson, in an excursion to the southern part of the Peninsula of India, discovered that the Shilandi arisi, growing in sandy situations by the seaside, and requiring but little water, was the common food of the natives during a famine, and when other grains are scarce. It is nutritious, pleasant to the taste, and makes a pudding somewhat resembling that made of sago. —*Ainslie, Useful Plants; Roxb.; O'Sh.*

CYPERUS CORYMBOSA. *Roxb.* Rot ball, in India used for mats.

CYPERUS ESCULENTUS. *Linn.*

Sha-ts'au, . . . CHIN.	Hiang-fu tsze, . . CHIN.

In China the shoots are used to make hats and matting; its tubers are there in much request for food. The toasted roots have been used as a substitute for coffee, and yield a preparation resembling chocolate. The cultivation of the plant deserves attention for its considerable alimentary value.—*O'Sh.* 628; *Von Mueller; Smith.*

CYPERUS HEXASTACHYUS. *Rottl.*

Var. α. Communis.	*Var.* β. Pendulus.
Var. α. Rotundus, *Roxb.*	
Sab, ... ARAB.	Tsau-san-ling, . . CHIN.
Moothoo, BENG., HIND.	Moostaka, Motho, DUKH.
Nagor mootha, moothi, ,,	Kora, ... MALEAL.
King-san-ling, . . CHIN.	Bhadra muste, SANS., TEL.
Kalandura, . . SINGH.	Mustakamu, . . . TEL.
Kore, Koray, . . TAM.	Parinvelamu, . . ,,
Kai vartaka musta, TEL.	Sakha-tunga, . . ,,
Gundala, Gundra, . ,,	Tunga muste, . . ,,
Bhadra tunga gaddi, ,,	Funarus, . . YUNNANI.

Var. α. C. rotundus, *Linn.*, *Roxb.*, grows in all Southern Asia, from Arabia to China, Java, and N. Holland. Its tuberous roots are sold in the bazars at 2 annas the pound, and used by perfumers, under the name of nagor moothi, on account of their fragrance. Hogs are very fond of them. Cattle eat the grass. In the Ho-nan, Shen-si, Hu-peh, and Sze-chuen provinces of China its fibres are woven into cloth. In India and China its fresh tubers are deemed medicinal.—*Smith; Roxb.; Voigt; Fl. An.; G. M. Top.; O'Sh.*

CYPERUS INUNDATUS. *Roxb.*

C. procerus, *Roxb.*	C. bacha, *Buch. Ham.*
Pati, ... BENG.	Potupullu, . . MALEAL.

Found in great abundance on the low banks of the Hoogly near Calcutta, and of rivers in the south of India, where the tide rises over it. It thrives most luxuriantly, and helps to protect the banks from the rapidity of running water.—*Roxb.*

CYPERUS PAPYRUS, of the Egyptians, is still called babier in Syria. It is about 15 feet high. The pith-like tissue of the larger flowering-stems, cut into thin strips, united together by narrowly overlapping margins, and then crossed, under pressure, by a similar arrangement of strips at right angles, constituted the papyrus of antiquity. This paper is but little liable to decay. Pliny, for instance, relates that the book of laws of Numa Pompilius was found in Rome in a high state of preservation, after having been buried nearly six centuries in the earth.—*O'Sh.* p. 628.

CYPERUS PERTENNIS. *Roxb.*

Nagor moothi, Naga, BENG.	Kola tunga muste, . TEL.

Roots aromatic; employed as a hair perfume. —*Roxb.; Voigt.*

CYPRÆIDÆ, the Cowry family of shells, the Porcellanen of the Germans, and Porcelaines or porcelain shells of the French. Cyprœa argus occurs at Ceylon, and a pair was once sold for four guineas. C. moneta is used in many parts of the East as a circulating medium, and for ornamenting the dress of several races, and the trappings of animals. 4 cowries = 1 ganda; 80 cowries = 1 pan.

CYPRESS.

Pien-peh, . . . CHIN.	Sarv, . . HIND., PERS.
Cyprès, ... FR.	Cypresso, ... IT.
Cypresse, . . . GER.	Cipres, ... SP.
Tirzah, ... HEB.	

The Chinese cypress Tien-peh is the Cupressus thyoides. The cypress-wood of Cupressus sempervirens, *L.*, is aromatic, compact, and almost imperishable. It is an evergreen forest tree, a native of the south-eastern parts of Europe, particularly of Italy, Mexico, and the southern parts of N. America.—*Cleghorn, Panj. Rep.* p. 63.

CYPRINIDÆ, a family of fishes of the order Physiostomi, the species of which are distinguished by their having the mouth small. The family is classed into fourteen groups, viz. Catostomina, Cyprinina, Rhoteichthyina, Leptobarbina, Rasborina, Semiplatina, Xenocypridina, Leuciscina, Rhodeina, Danionina, Hypophthal, Michthyina, Abramidina, Homalopterina, Cobitidina, in which are 110 genera, and about 690 species.—*Engl. Cyc.* p. 219. See Fishes.

CYPRUS, an island in the Mediterranean, near the coast of Syria; taken by the Turks from the Venetians in 1570. Its length is 140 miles, and its greatest breadth 60, pervaded by a chain of mountains, the highest of which is called Olympus. The soil is an excellent fertile clay. It was transferred to Great Britain in 1879.

CYRTOPHYLLUM FRAGRANS. The Anan of the Burmese, grows in Moulmein. Is one of the Nux vomica tribe, and one of the hardest, most compact, and heaviest woods known.—*Cal. Cat. Ex.* 1851.

CYRTUS INDICUS. *Bloch.* A fish of the Indian seas, of which large quantities are dried, and consumed by the natives of India.—*Cantor.*

CYRUS RIVER. The principal streams of the province of Fars are the Bendamir or Araxes, which receives the Kur-ab or Cyrus, as it falls into lake Bakhtegan; and the Nabon, whose course is from Firozabad southward to the Persian Gulf. In this country are also the higher parts of the two branches of the Tab.

CYRUS THE GREAT. A cylinder of this monarch, which was sent to Britain after Mr. Hormazd Rassam's return, was the most interesting historical record in the cuneiform character till then brought to light. It is in the Babylonian script, and was discovered among the ruins of the Birs Nimrud, the ancient Borsippa. The cylinder is 9 inches long by 3¼ inches in diameter, and must originally have been covered with 45 long lines of text. The writing is very minute, and it is computed that the inscription would run to about 130 lines of the average length. Unfortunately the beginning was wholly lost, with the exception of a few scattered signs. It is found to relate to the very moment of that great historical event, the capture of Babylon by the founder of the Persian universal monarchy. Nabonidus has abandoned his capital, which has fallen into the hands of Cyrus, though he is still struggling against his fate in Babylonia. The Guti, and a people whose name is taken to be equivalent to Blackheads, are described as his subjects, and the god Merodach has delivered king Nabonidus into his hands. In a proclamation issued by Cyrus upon the taking of the city, the king repeats in the first person the principal allegations of the preamble. It is partly mutilated, but the beginning, 'I am Cyrus,' with his genealogy in full, and his description of himself as 'king of Gyndia,' etc., can be pretty clearly made out. Cyrus is made to speak of his reparation of the temples of Babylon, and of the favours conferred upon him by Merodach, Bel, and Nebo, in answer to his prayers to them; of the homage paid him by distant nations, and of the gatherings of the people in the city to acclaim him king. Sir Henry Rawlinson said this new text settled for ever in favour of Herodotus, as against Ctesias (in Diodorus), the genealogy of Cyrus. He was fifth in descent from Achæmenes, next to whom came Teispes, then Cyrus the grandfather, and Cambyses, the father of Cyrus the Great. The succession was direct, not indirect, as Professor Oppert has maintained. The inscription styles the native country of the Persians 'Assan,' which Sir Henry Rawlinson seems to think was in the plains between the modern Shuster and the Persis of the classical writers. An important religious centre, named Calana in the inscription, he referred to the Calneh of Genesis and the Calno of Isaiah. Cyrus evinced sympathy with the Jews, as is shown by Isaiah xli. 2, xliv. 28, xlv. 1, and Ezra i. 2 to 4.

CYSTICERCUS or Scolex, from Kustis, a bladder, and Kerkos, a tail, is a hydatid or larval form of a cestoid worm, called in its sexually matured state, Strobila, the C. tænia mediocanellata. When the flesh of an animal in which it is contained has been received into the human alimentary canal, the Cysticercus can be developed into a tape-worm.

D

D, as sounded in the English language, has letters with corresponding powers in Arabic, Persian, Hindustani, Sanskrit, Hindi, Mahrati, Gujerati, Bengali, Uriya, Telugu, Karnata, Tamil, and Malealam. In all these tongues, however, there is also a softer-sounding d. The English compound dh also, the Tamil tongue excepted, has corresponding letters, simple, modified, or compounded, with both soft and hard sounds; d and r, in several of the Indian tongues, are, moreover, so pronounced as to be difficult for a European ear to catch their niceties; and d and r are therefore frequently confounded. D and r are not used by the Chinese, who use the liquid l for r.

Some nations of Europe, with a soft pronunciation of the letter j, require to prefix d to that letter for the correct pronunciation of such words as Jamal, a camel; thus Djamal. Vambery used dj for the Arabic chim. Dh is changed by the Siamese to th.—*Wilson; W. W. Hunter.*

DAB. Hind. Poa cynosuroides, the sacred grass of the Hindus; is generally applied only to the first shoots of the Koosh grass; it is called Dubsa in Rohilkhand, and is used by Hindus in their religious services.

DAB. Hind. of Kohat. A moist soil.

DAB or Dabhū. Hind., Tam., Tel. A small copper coin; money in general.

DABBATU-l-ARZ. Arab. The second beast mentioned in the Revelation. Mahomedans believe it will issue from a mountain in Mecca, with the staff of Moses and the seal of Solomon. With the first it will strike the believer, and with the latter it will stamp the face of the infidel with the words, 'This is an infidel.'

DABGAR, a low caste of non-Aryans, who manufacture large leathern vessels for holding ghi or clarified butter (dabbar), and of vessels in which atta and ghi are deposited.—*Sherring.*

DABHA, a town in the Chanda district of the Central Provinces, lat. 19° 38′ N., long. 49° 42′ E. The people manufacture tasar silk handkerchiefs, coloured cloths, and silver snuff-boxes. The population is almost wholly Teling.—*Imp. Gaz.*

DABHA, petty state of Mahikanta; estimated population in 1875, 1612. The ruler is a Mukwana Koli, a convert to Islamism. The religion of the Miah race of Dabha is a mixture of that faith and Hinduism; they give their daughters in marriage to Mahomedans of rank, and marry the daughters of Koli chiefs. They burn their dead.

DABHOI, the ancient Dharbhavati. A town in the territory of the Gaekwar of Baroda, 15 miles S.E. of Baroda; lat. 22° 10′ N., long. 73° 28′ E.;

population (1872), 14,898. In the town is a place called Mamadokri, where stands a Khisni tree, through whose hollow trunk no guilty person can pass.—*Imp. Gaz.*

DAB-i-AKBAR. ARAB. In astronomy, the constellation of the Great Bear. Dab-i-Saghir, the Lesser Bear.

DABISHLIM, an ancient Hindu raja, by whose orders the fables of Pilpai were composed.

DABISTAN, the School of Literature, a learned work on the various religions of Asia. It is in the Persian language. It contains a dialogue between a Brahman, a Mahomedan, a Zoroastrian, a Jew, a Christian, and a Philosopher. The representative of each religion brings forth his arguments, which are successively condemned,—some on account of the vicious character of their founders, and all for the absurdity of their doctrines, and the want of proof of their alleged miracles. The Philosopher winds up the discourse by recommending a system which shall have no ground but reason and virtue. It was translated by Colonel Kennedy in Tr. Bombay Lit. Soc. ii. p. 247; also, though not very accurately, by Shea and Troyer, for the Oriental Translation Fund (Paris, 1843). The author, Mohsin Fani, belonged to the sect of Sipasi or Abadi, a branch of the Parsees, and wrote in India during the latter half of the 11th century of the Mahomedan era. His account of the Zoroastrian religion is exceedingly full and accurate; and he also gives a good description of the Hindu and Muslim systems, as well as of the Sufi and other philosophical sects.

DABKAI, a goldsmith who flattens gold wire into tinsel and spangles.

DABLING—Dubling, two villages in Bushahr State, Panjab; in lat. 31° 45′ N., and long. 78° 39′ E., and 9400 feet above the sea, on a belt of arable land near the left bank of the Sutlej. The cliffs on the opposite side of the river rise to a sheer elevation of 6000 or 7000 feet. The population have the Chinese Tartar type of physiognomy, and profess Buddhism. The path between the two places, a mile apart, is rendered practicable by means of wooden scaffolds fastened against the face of the precipice.—*Imp. Gaz.*

DABOU, a small weight of Masulipatam, equal to 191 grains.

DABRAY JOGI, also called Dabray Bajanawala, and Bal Santa ka Jogi, a class of Hindu mendicants who sound the dabra.

DABUL or Debul, a seaport town on the Malabar coast, eight miles south of Severndrug. This port was burned about 1508 by the Portuguese viceroy, Almeyda. He came to India in 1505, the successor of Dias, Vasco da Gama, and Cabral. On his arrival, he concluded a defensive treaty with the king of Vijayanagar; but the Venetians, who up to that time had monopolized the trade with India, jealous of the growing power of the Portuguese, instigated the king of Egypt to oppose their progress. He accordingly sent a fleet under Mir Hukum, who, in conjunction with the fleet of Gujerat, bore down upon Lorenzo, son of Almeyda, and defeated him in 1508, Lorenzo falling in the fight. Almeyda, to avenge his son's death, burnt the port of Dabul, and defeated the enemy in the harbour of Diu, and then concluded a treaty.

DACCA. There are two towns of this name, one Dacca Jalalpur to the north of Ballargunj, and Dacca proper, between Dacca Jalalpur and the Megna river. The latter gives its name to the whole district, which is one uniform level of rich alluvial soil, annually inundated by the overflow of the great rivers. The villages are built upon mounds of earth artificially raised above the flood. During the rainy season, this tract presents the appearance of a continuous sheet of green paddy cultivation, through which boats sail to and fro. The chief means of communication at all times of the year is by water. The bordering rivers are the Ganges or Padma, the Jamuna or Brahmaputra, and the Megna. The city of Dacca is situated on the north bank of the Buriganga river, in lat. 23° 43′ N., and long. 90° 25′ 25″ E. The town extends along the bank of the river for a distance of nearly 4 miles, and inland, towards the north, for about 1¼ mile. The ruins of the capitals and palaces of the Bhuiya rajas lie scattered throughout Eastern Bengal, along the line of the Brahmaputra valley; and their memory is still cherished in the household tales of the Hindu peasantry. The Mahomedans first entered Bengal in 1203 A.D.; and two most celebrated of their viceroys are Mir Jumla, the general of Aurangzeb, who failed disastrously in his expedition to Assam, and the nephew of the Nur Jahan Begum, Shaista Khan, who broke the power of the Portuguese, and annexed Chittagong to the Moghul empire. Dacca has numerous Hindu temples and many Mahomedan mosques for the large Musalman population, with churches and schools of the various Christian sects. The Roman Catholics are under the spiritual guidance of priests from Goa and elsewhere, with churches of their own and old Portuguese names. Formerly they used to intermarry with the natives, but of late years they seek alliances amongst their own people. Their complexions are very dark, and their customs semi-oriental; but they supply Calcutta with excellent domestics. The English, the French, and the Dutch had established factories about the middle of the 16th century, when the city was visited by the French traveller Tavernier. Cotton, jute, and safflower may be considered staples of the district. The indigenous cotton has long been cultivated along the banks of the Megna from Feringybazar to Edilpore in Bakarganj, a distance of about forty miles; on the banks of the Brahmaputra creek (the ancient channel of the river of the same name), and along the Luckia and Banar. It presents different shades of quality, the finest of which is named photi, and is the material of which the delicate Dacca muslins are woven. It is described by Roxburgh as differing from the common herbaceous cotton plant of Bengal in several particulars, but chiefly in having a longer, finer, and softer fibre than it. Three pieces of muslin, made to be presented to the Prince of Wales, measured each 20 yards by 1 yard, and weighed 3½ ounces. Next to fine muslins and embroidered fabrics, silver filagree work is that for which Dacca is most celebrated. This art is also practised in great perfection at Cuttack, and in Sumatra and China. The articles usually made at Dacca are ladies' ornaments, such as bracelets, earrings, brooches, chains, necklaces, etc., and the attar-dans and small boxes for natives. The design best adapted for displaying the delicate work of filagree is that of a leaf. The apparatus used in the art is exceedingly simple, consisting merely of a few small crucibles, a piece

of bamboo for a blow-pipe, small hammers for flattening the wire, and sets of forceps for intertwisting it. The drawing of silver and gold (*i.e.* silver wire covered with gold), used as thread in embroidery, is extensively carried on here. Benares is also celebrated for this art. There are several varieties of silver and gold thread (badla) made at Dacca, as kalabatoon for the embroidery of muslins and silks, goshoo for caps, and covering the handles of chauris; sulmah for turbans, slippers, and hookah-snakes; and boolun for gold lace and brocades. Some of it is drawn almost as fine as a hair. In the time of Aurangzeb a quantity of this article was made yearly for the court at Dehli. A hundred sticks covered with it, and plain gold and silver badla to the amount of £2000 in value, appear among the items composing the mulboos khas nuzr, which was annually sent to the emperor. Shawls, violins, shell ornaments, and idols are largely manufactured. Amongst Mahomedans, the name of Dacca was Jahangirnagar.—*Dr. Taylor.*

DACELLO PULCHELLA, a kingfisher. Their feathers are much prized by the Chinese, who make them into fans.

DACOITY, a legal term of British India for a system of robbery by gangs of people of the country. It is derived from Daka, the verb being Daka parna, to plunder. In India, thugs and dacoits who had been tried and convicted as having belonged to a band of thug murderers or dacoits, but who, having made a full confession of their crimes (in some individual cases amounting to the murders of as many as eighty persons), and having denounced their associates, received a conditional pardon. Originally, in the criminal code of India, Dacoity was applied to the armed bands who plundered, but it and the term Thuggee are now applied to several well-defined classes, and in times of scarcity many of the unemployed may join. Amongst the predatory races were the Budak of the Nepal Terai, also the Dasadh of Behar, who used to make frequent predatory excursions into Lower Bengal, the Bind of Ghazipur, the Nath, the Ahir, Boria, Kurmi, Gujar, and a host of low castes. In the Panjab, dacoity generally assumed the form of cattle-lifting. The Meena were active and energetic, and were concerned in most of the dacoities of Northern India. And in the S.W., the Santal with his club, long bamboo spear, and terrible battle-axe, often swept down on the plains of Birbhum, Hazaribagh, and adjacent districts, and the flare of their torches or light of the burning huts gave the first warning. The leaders of a dacoity band in Central India carried with them an axe with a highly-tempered edge, sacred to Bhawani.—*People of India*, vii.

DACRYDIUM, a genus of coniferous plants, growing in New Zealand, Tasmania, and New Caledonia. They are valuable timber trees, growing to a great height.

D. Colensoi, *Hooker*, of N. Zealand, attains to 50 feet, yielding hard and incorruptible timber.

D. cupressonum, *Solander*, also of N. Zealand, the rima or red pine of the colonists, attains to 200 feet, with pendulous branches, yields a hard, valuable wood.

D. Franklini, *Hooker, fils*, the huon pine of Tasmania, has a height of 100 feet, circumference 20 feet; its wood highly esteemed for shipbuilding and artisans' work.—*J. Backhouse.*

D. Kirkii, *F. v. Mueller*, the manoao of N. Zealand, a pyramidal tree, attaining 80 feet in height, has a reddish-coloured timber.

D. Taxifolium, *Solander*, the kaka terre of New Zealand, grows in low marshy ground. Its foliage resembles the yew, and it grows to 140 or 180 feet in height.

—*Jam. Ed. Jour.* 1825, xiii. p. 378; *Ferdinand von Mueller.*

DACTYLOPTERUS. *Lacépède.* A genus of fishes belonging to the order Acanthopterygii and family Loricati; Trigla volitans, *Linnæus*, commonly called the flying gurnard and flying fish. Another species inhabits the Indian seas, and is the Dactylopterus orientalis of Cuvier.—*Eng. Cyc.*

DAD. PERS., HIND. Literally, a gift; a postfix and prefix much in use, as Khudadad, given by God, the Theodotus of the Greeks, and Dev-dutt of the Hindus.

DAD. PERS. Justice; petition; representation. Dad-khah, a plaintiff for justice. Dādsitadan, taking vengeance. Dad-khah means one seeking justice. It was the title of the earlier viceroys of Central Asia, and is still used in Khokand and Eastern Turkestan. Dad-Mahal, lit. palace of justice.—*Vambery, Bokhara*, p. 317.

DADAP. MALAY. A tree of the Archipelago, planted in the coffee grounds of Java to shelter the young coffee trees.—*M'Nair.*

DADAR, a town and valley in Cutch Gandava, lat. 29° 28′ N., and long. 67° 34′ E., 35 miles N.W. from Bagh, and 5 miles from the eastern entrance of the Bolan pass, on the river Bolan, surrounded by hills. In the first week of May, the thermometer ranges from 64° to 120°. It is separated from the great plain of Cutch Gandava by a line of jabbal or low hills. Dadar is excessively hot, and a Persian couplet runs, 'Ai Allah, dozakh ki sakhti, chon Dadar hasti?' 'O Lord, why did you make hell when you have Dadar?'

DADH or Dat. MAHR. Ground prepared by burning for being planted; the weeds and grass are strewed over it to be burned.

DADHALYA, a petty state in Mahikanta. The family are Sesodia Rajputs, who originally came from Udaipur (Oodeypore) in Rajputana.

DADUNGAWU, a tutelary spirit of the Java hillmen.

DADU PANDURANG, RAO BAHADUR, a learned native of Bombay, and religious reformer, who died 17th October 1882, aged 68. He mastered Mahrati, Gujerati, Urdu, Sanskrit, English, Persian, Telugu, Tamil, etc., and at an early age composed a complete Mahrati grammar, published a school atlas, a work entitled The Wiping of the Tears of the Widows, Grammar of the Persian, and another of the Sanskrit; the Kekavali, The Cosmopolitan Arya, and The Hindu Gentleman's Reflections. He was the founder of the Paramhans Sabha, which led to the formation of the Prarthana Samaj'h.

DADU PANT'HI, a Vaishnava sect of Hindus, whose tenets are derived from Ramanand, after whom, Dadu, its founder, is said to be the fifth spiritual guide. Their worship is restricted to the Japa, or repetition of the name of Rama, as the deity negatively described in the Vedanta theology. They have no temples or images. Dadu was born at Ahmadabad about A.D. 1600, and is said to have been a cotton-cleaner there and at Ajmir. They carry a rosary, have no frontal mark nor mala, but wear a round or four-cornered hat. They are said to be numerous in Marwar

and Ajmir. Their chief place is Naraina, 40 miles from Jeypore. They are classed as (*a*) Virakta, who go bare-headed, and have but one garment and one water-pot; the (*b*) Naga, who carry arms and serve Hindu princes, making good soldiers; the (*c*) Bhistu Dhari, who follow the avocations of ordinary life. They burn their dead at dawn.—*Wilson.* See Dadu; Vairagi.

DÆDALUS SHOAL, called by the Arabs Abdul-kheesan, in lat. 24° 55′ 30″ N., and long. 35° 50′ 30″ E. A submerged coral reef in the Red Sea, 1200 yards long and 450 yards broad, with six inches of water, on which, in 1862-3, a lighthouse was erected.—*Findlay.*

DAEE, a sect met with at Gajer, Makran, Kej, and Turbot. They resemble the Brahui in appearance, and wear the same dress. Portions of certain of the Brahui tribes are Daee, such as the Sageta, Takee, Shadu, Lace, Marbrow, etc. They have a mullah or priest, and a book. They say that they originally came from the westward near Kej, where there is a town called Turbot. The sect abounds in Makran, and has extended east. At Turbot is a little hill of circular form, called by them Koh-i-murad, on the summit of which is their principal masjid, where they meet at stated times to perform their rites. Professor Wilson, in his Ariana Antiqua, p. 141, mentions the Dace, amongst other Scythian tribes, as associated with the Massagetæ; and in a map attached to Digby's translation of Quintus Curtius, their position is fixed a little south of the Jaxartes. This coincidence of association with the Sageta and Sakæ, both then and now, is worth remarking.

DÆMIA EXTENSA. *R. Brown.*

Cynanchum extensum, *Jac.*	C. bicolor, *And.*
C. cordifolium, *Retz.*	Asclepias echinata, *Roxb.*
Chagal-banti; Ubrun, BEN.	Vela parti; Utamani, TAM.
Sagoani, ... HIND.	Jutuga, ... TEL.

This plant is used medicinally. Its fibre, known commercially as ootrum fibre, is a promising substitute for flax. It is soft, white, silky, and strong, and can be procured in considerable quantities in Southern India.—*M. E. Jur. Rep.*

DAEN or Dawan. HIND. Tying a number of bullocks together for the purpose of treading out the grain from the ear.—*H. Elliot.*

DAENDELS, HERMAN WILLIAM, born at Hattem in Guilderland, 21st October 1762; died at New Guinea, 1818. He was Governor-General of Dutch India, and formed the great military road of Java.—*Max Havelar.*

DAERD, a class of agricultural slaves in Kanara.

DAF. HIND. A hand-drum, a tambourine, the only lawful musical instrument for Musalmans. Dafli, a small tambourine.

DAFFADAR. PERS. An officer in the native irregular cavalry; the title of a native military or police officer; a native non-commissioned officer of cavalry of the Indian army.

DAFLA. HIND. A tambourine. Daira, a large tambourine.

DAFTAR. HIND. A record, a register, an account; an office in which public records are kept. A volume, a book of gold or silver leaf. Daftardar or Daftari, a record keeper, a registrar, an accountant, a gold-beater.

DAG. HIND. of Kohat. Land cultivated only once in three years.

DAGA, a boat used on the Indus.

DAGGER. The daggers in use in S.E. Asia are of many shapes, and all with individual names. One of a particular shape is the official weapon in modern Indian courts. A drawing of 'the dagger of ministry' is given in the last volume of Duff's History of the Mahrattas. Those usual in British India being the jambiya, bichwa, pesh-kabz, khanjar, katar, etc.—*Hind. Theatre.* See Arms.

DAGH. TURKI. A hill, a mountain. Alajah Dagh, or variegated mountain, is near Ararat.

DAGHA. HIND. Deceit, fraud. Dagha-bàz, a thief, a swindler.

DAGHDA, mother of Zoroaster, founder of the Parsee religion.

DAGHESTAN, a province in the Caucasus subjected by Russia after a war of 20 years. The men of Daghestan are intelligent, and were at one time, with the exception perhaps of the Circassians, the most warlike of the races of the Caucasus. Unlike the other inhabitants of the range, they are extremely industrious, and have even shown themselves capable of organized labour requiring considerable skill. During the war, Schamyl was able to erect a cannon foundry in their country. Elburz is 18,526 feet; Great Ararat, 16,916; Little Ararat, 12,840 feet.

DAGOBA or Dhatugarbha. SANSK. A Buddhist bone or relic receptacle. The term is from Da, Datu, or Dhatu, a relic; Garbhan, a shrine; and was in use by Indian Buddhists. At Anaradhapura, in Ceylon, are several dagobas. They were built at from B.C. 307 to A.D. 276, and end in a terminal Tee, in the form of a cube supporting a pointed spire. They are the Tibetan Dungten, a relic monument which is still erected in Tibet over the body or the ashes of the lamas. The ancient edifices of Chichen, in Central America, bear a striking resemblance to the topes or dagobas of India. The dagoba is the descendant of the sepulchral tumulus of the Turanian races, whether found in Etruria, Lydia, or among the Scyths of the northern steppes. See Chaitya.

DAGON. BURM. A corruption of the Talain words Ta-kong. The Shooay Dagon is a Buddhist temple of Rangoon, which rises from the summit of a scarped hill to a great height.

DAGON, the fish-god of the Assyrians, possibly the source of the fish avatar of the Vaishnava.

DAGOORAN, a shrub of Jullundhur. The wood is used as fuel, and the leaves are given to buffaloes as fodder.—*Colvr. Pills. Disp.*

DAGOOTHA. BURM.? A crooked timber in Tavoy and Mergui, floats in water, and used for building boats, for planks of houses, ladders, etc., but is liable to attacks of worms and dry-rot.—*Captain Dance.*

DAGSHAI, lat. 30° 53′ 5″ N., and long. 77° 5′ 38″ E., a military station 16 miles S.S.W. of Simla. The cantonment is 6025 feet above the sea, on a bare and treeless height.—*G. T. S.*

DAH. PERS. Ten. Dah'm, the tenth. In the Panjab, Dah-mahi-dar, farm servants hired for ten months. Daha, also Ashra and Ashora, the first ten days of the Maharram, which Shiah Mahomedans pass in sorrow. Sunni Mahomedans erect tabuts in reverence of Hasan and Husain, sons of Ali.

DAH. HIND. In the N.W. Himalaya, a clod-crusher, a flat beam of wood dragged over the fields to smooth clods. It is the Sohaga of the plains.—*Powell.*

DAH, a heavy weapon made use of by the Bhot and Burmese races, as a sword in war, and in peace for felling trees or cutting up firewood; the friction on the handle is very great.

DAHI. HIND. Coagulated milk: sour milk.

DAHIA. HIND. A Jat tribe in Dehli district.

DAHINA or Dakshana. HIND. The left.

DAHIR, the takhallus or literary name of Mirza Salamat Ali, who lived in Lucknow in the 19th century. He was at one time a papermaker. He was famed for his marsia or elegies, and was known as the Tuti-i-Hind, the parrakeet of India. He died about A.D. 1875.

DAHIR, Desput, or lord of Debeil, from Des, a country, and Put, the head. He was a ruler over the country of the Indus (about A.D. 711, A.H. 92), whose capital was at Alor, near Bakkar; but he possessed Multan and all Sind, with perhaps the adjoining plain of the Indus, as far as Kalabagh. Hejaj, governor of Basra, sent a force against him under his nephew, Muhammad Kasim, who took Dewal, defeated and took prisoner a son of Dahir, advanced on Nerun, now Hyderabad, and took Schwan. He subsequently advanced on Alor, where he encountered Dahir, who was defeated and slain. His widow defended the city; but ultimately the women devoted themselves to the flames, which they lighted themselves. The Rajput garrison bathed for the sacrifice of themselves, and perished fighting. The city was taken by assault; all the men in arms were slaughtered in the storm, and the women and children reduced to bondage.—*Elphin.* p. 262. See Muhammad Kasim.

DAHLAN, a tribe of Tuga in the Upper Doab.

DAH-MUSHT. HIND. A broad variety of Kashmiri paper, lit. of ten handbreadths.

DAHNAJ. ARAB. A stone described by Abu Zaid as resembling an emerald.

DAHYA. HIND. The Shum or Kumari or Daho system of cultivation carried on by hill tribes. The land is prepared by burning the grass and brushwood on it. The seed is then sown in the ashes.

DAI. PERS., HIND. A wet nurse, an accoucheuse, a midwife. The British in India use the word Ammah for a wet nurse. Dai-dud'h pilai, a wet nurse. Dai-janai, a midwife.

DAIJA, literally lamp-holders; the term applied to the handmaids who invariably form a part of the Rajput Daij. (Rajasthan, i. p. 628), dowry or portion, which the Hindu wife brings a husband in marriage. It is the Maritagium of the civil law. Wilson, in a note to Mill's India (i. p. 447), says that 'amongst the Hindus the practice of purchasing a bride by a dower is apparently of modern growth, and a violation of the law.' There are, however, passages in Menu on the subject which would imply the observance of both practices; and the same may perhaps have continued till the time of the Greek invasion, for Arrian (Indica, cxvii.) says the Indians neither took nor gave money in marriage; while Megasthenes (Strabo, lib. xv.) says their wives were purchased for a yoke of oxen. Amongst the agricultural tribes in the N.W. Provinces, the present practice is most usual for the bride's father to purchase the bridegroom, so that the man receives the dowry or Daija, which consists for the most part of money and household utensils. Thus, even when the daughter of Jye-chand was forcibly abducted by Prithi-raj, her father sent to him the richest gems, the fruits of the victory of Beejy Pal, inestimable wealth, pearls, elephants, and dyes. This custom, the fruitful source of female infanticide, arises from the almost universal desire to obtain for the daughter the privilege of marrying into a higher family, which is only to be acquired by purchase. Sometimes, indeed, an imaginary purchase is made, similar to that which took place at certain Roman marriages, under the name of Coemptio, though of course not with a view of securing the peculiar kind of privileges which the Coemptio gave, but merely as a type of a custom of which the breach is thought preferable to the observance. This subject is noticed in Steele's Summary of the Law and Customs of Hindu Castes.—*Elliot.*

DAIMACHAS, an ambassador sent by Seleucus, or by his son Antiochus Soter, to Bimbasara, son of Chandragupta. He was regarded by Strabo as the most lying of all the Greek historians of India. See Vindusara.

DAIMIO or Daimiyo, a hereditary prince of Japan territorial nobility, who, until the revolution in 1869, had extensive jurisdiction, with revenues estimated at 10,000 koku of rice. The words mean Great Name. The nobility are now designated Ku-wa-zo-ku. Each Daimio had a particular crest, which was marked upon all his effects, from his gateway to the lacquer made for his own use, like the European dinner or breakfast sets. Besides a private crest, each Daimio had a public one, to be put upon all china or lacquer made on his estate. When buying lacquer with both crests upon it, you know that it had been in use in the Daimio's family, and that either he has been in immediate want of money, and has therefore sold some of his household furniture, or that he has had as much use as was required out of the article. The Gorogio was the council of five Daimios, who were in fact the executive government, and with whom all the foreign ministers had their transactions.—*Frere, Antipodes*, pp. 419, 447.

DAIN, also Daina. BENG., HIND. A witch. PERS., debt; BURM., a league, 2¼ miles.

DAINGNET, of whom there are 1995 in the Akyab district, are in feature somewhat like the Gurkhas of Nepal, and differ from the hill tribes of Akyab. They dress in white, wear their hair at the back of the head, and do not tattoo their bodies. They do not intermarry with other races, and dwell among the hills of the Yetthaydoung township, near Chittagong frontier, across which they are said to have come into Arakan. Their language is said to be connected with Nepali. A few speak that tongue; some can talk Bengali, and some have acquired Arakanese. The returns of 1872 show 3542 Daingnets resident at that time in the district of Akyab.

DAIR, a town north-west of Bussora, remarkable for a colossal tower of beautiful structure. Ibn-ul-Wardi in the Khassila-ul-Ajaib says that strange sounds are occasionally heard to proceed from its interior. Great antiquity is attributed to this minaret by all the natives of the country. —*Mignan's Travels*, p. 239.

DAIRA. HIND. The largest variety of tambourine, being from a foot and a half to two feet in diameter, played upon with a stick.

DAIRI, until 1869, amongst the Japanese, the

ecclesiastical head of the government, who resided at Miako. See Kio; Kobo.

DAISY, the little perennial plant called Bellis perennis by botanists. In India cultivated by the British as a souvenir of home.—*Jaffrey.*

DAITYA, a Hindu term used in various ways, but generally to designate a different and hostile race of ancient days. In the Mahabharata they are spoken of as aborigines, and others of them as having power on the sea-coasts. In other places the term is made applicable to the Buddhists; and the mythological wars of the Daitya against the Devata are supposed to be the hostile operations against the Aryan race carried on by some of the races anciently in the Peninsula of India who opposed the advancing Aryans. In Hindu mythology the Daitya bear the same character as the Danava. When the Deva obtained the cup of Amritsar in churning, the Daitya rose in arms to seize it, but were defeated and driven back, according to the myth, to Patala or hell, but they subsequently acknowledged the supremacy to the holders of the discus and mace. The wars between the immigrant Aryan and the Daitya were thus changed in the course of years into mythical wars between gods and demons.—*Wheeler, Hist. of Ind.*

DAITYA, in Hindu Mythology, the giant sons of Diti. Daitiyari, from Ari, an enemy. Daitya-guru, from Guru, a teacher.

DAIVAKA or Daivajna, astrologer caste of Brahmans.

DAJIL, one of the three eastern sections of Baluchistan. It borders on the river Indus. The town of Dajil is in Cutch Gandava.

DAJJAL. ARAB., HIND., PERS. Antichrist. The Mahomedans believe in Antichrist, whom they term the false or lying Christ, al-Masih-ud-Dajjal. He is to be one-eyed, and marked on the forehead with the letters KFR, signifying infidelity. They say that the Jews give him the name of 'Messiah bin Daood,' and pretend he is to come in the last days, and to be lord both of land and sea, and that he will restore dominion to them. According to the traditions of Mahomed, he is to appear just between Al-Iraq and Syria, or, according to others, in the province of Khorasan. They add that he is to ride on an ass, and that he will be followed by 70,000 Jews of Isfahan, and continue on earth forty days, of which one will be equal in length to a year, another to a month, another to a week, and the rest will be common days; that he is to lay waste all places, but will not enter Mecca or Medina, which are to be guarded by angels, and that at length he will be slain by Jesus, who is to encounter him at the gate of Lud. It is said that Mahomed foretold Antichrists to the number of about thirty, but no one of greater note than the rest.—*Lane.*

DAJLA, the river Tigris.

DAK. HIND.; Tawal, TAM. The post, mail; to travel by dak, meaning as fast as the post, was performed in palanquins, or in carriages, or on horseback. Also the mail or postal arrangements of India, where railroads, carts, horses, and men-runners are employed to carry the mails.

DAKA. SIND. A water-wheel for irrigation.

DAKAR. HIND. of Cis-Sutlej. Low-lying, stiff clay land.

DAKAUT, also Dakautiya. HIND. Hindus born of or descended from a Brahman father and Goalin mother. They subsist on alms collected on a Saturday, and are astrologers, fortune-tellers, and the like.

DAKH. HIND. Vitis vinifera; grapes, especially the wild vine, also raisins. Kagh-dak'h designates the currants of Ribes rubrum, and Gidar dak'h, the fruits of Cissus carnosa, Sageretia oppositifolia, and Prunus padus. Dakh-ka-mad'h, wine.

DAKHILAH. PERS. In accounts, an entry; also a receipt for money.

DAKHMA. ARAB. A coffin, a vault, a place for the dead; the tower of silence, the place of lodging the bodies of the Parsee dead, vernacularly Dokhma, or tower of silence.

DAKINI. HIND. A witch, a female goblin. In Hindu mythology also called Asra-pas, or blood-drinkers; a kind of female imp, attendant on Kali, and feeding on human flesh.

Dakin-raya, a forest deity in Saugor island. After a battle in which Bugtea, a Rahtor chief, charged through Abhye Singh's army, the Rajput poets sang of his deed,—Is it the battle-cry of Kali, the hissing of Sehesnag, the denunciation of Kalispur, or the war-shout of Hanowanta? Is it the incarnation of Nur-sing, or the darting beam of Surya? or the death-glance of the Dakini? or that from the central orb of Trinetra?—*Rajasthan*, ii. p. 111; *Dowson.*

DAKOTA, also Dakocha, also Dakaut, in the Mahratta country, a tribe who follow fortune-telling; almanac-makers. They claim descent from a Brahman father by a cowherd mother.

DAK-PA, also called Bruk-pa, a Bhot race.

DAKRA, a poisonous root of Nepal, made up with grain into balls, and so employed to poison elephants.

DAKSHA, author of a law treatise; is mentioned in the Mahabharata. He lived as a hermit on Mount Vrindha.—*Ward*, iv. p. 27.

DAKSHA, in Hindu mythology, was an avatar of Brahma upon earth in a human shape. There are several accounts, but the myth relating to him indicates a contest between the followers of Siva and Vishnu. Wilson says Daksha was the son of Brahma and father of Sati, whom, at the recommendation of the rishis or sages, he espoused to Siva, but he was never wholly reconciled to the uncouth figure and practices of his son-in-law. Having undertaken to celebrate a solemn sacrifice, he invited all the gods except Siva, which so offended Sati, that she threw herself into the sacrificial fire. To avenge her fate, Siva created Virabhadra and other formidable beings, and sent them to the scene of action, where they disturbed the rites, beat and mutilated the assistants, and even maltreated the gods, till Siva was appeased, and arrested their excesses. Daksha, who had been decapitated in the scuffle, was restored to life, but the head of a ram was substituted for his own. Sati was born again as the daughter of the mountain Himalaya, and was again married to Siva. From this second birth she is called Parvati, the mountaineer, or Girija, the mountain-born. The disturbance of Daksha's sacrifice is a favourite legend with the Hindus.—*Coleman, Hind. Myth.* p. 6; *Hind. Theat.* ii. p. 263.

DAKSHA SAVARNI, in Hinduism, one of the 14 patriarchs who preside successively over the 14 Manwantaras of the Calpa.

DAKSHINA. SANSK. A present to a Brahman on the conclusion of any ritualistic ceremony.

DAKSHINA. Sansk. The right hand; vernacularly Dakhin or Deccan, as the right hand; hence the country to the south, when a Hindu looks towards the rising sun, the south point of the compass, Southern India. Dakshina-Patha, the Sanskrit name for the Dekhan. The Periplus names it Dachinabades. Dakshina-Yana, the sun's southern declination.—*Prin. Ind. Ant.* See Dekhan.

DAKSHINACHARI. Sansk. One who follows the observances (achara) of the right-hand tribe or caste; practisers of the purer forms of the Hindu ritual, as opposed to the Vamachari or left-hand caste.—*Wilson, Gloss.*

DAL. Hind. Any split pulse, hence Tur-ka-dal, Cajanus Indicus; Mung-ka-dal, Phaseolus radiatus, Ph. mungo; Channa-dal, Cicer arietinum. The various dal are greatly used as food by all the richer classes of natives, and many Europeans also like it, generally mixed with rice. Europeans often pronounce the name as if written Dol. The dal of Cajanus Indicus is considered the best.

DAL, the lake or Dal of Kashmir, lies to the north of the chief town, stretching from the base of two hills to the more lofty mountain range which bounds the valley on the north. It is 5 miles long and 2 miles broad, but is only open in its northern half, the end nearest the town being occupied by large islands, with narrow channels between them, in some of which there is a good deal of current. Its waters are discharged into the Jhelum by a considerable stream, which, flowing from its south-east corner, runs to the westward in a course nearly parallel to the southern margin of the lake for nearly a mile, when it turns abruptly south to enter the Jhelum in the middle of the capital of Kashmir.

DAL. Beng., Hind. A coterie, a club, an association. An ornament worn by fakirs. A bough; a basket of leather or twigs. Dali, a present.

DALACA or Dahala, the largest island in the Red Sea, near the coast of Abyssinia, well known for a pearl fishery, in long. 40° 10′ E., and lat. 15° 44′ N.

DALADA. Singh. The sacred tooth of Buddha kept at Kandy in Ceylon. The original was destroyed by the Portuguese in A.D. 1560. That was probably the tooth of a man; but the object now shown is a piece of discoloured ivory almost two inches long, less than one in diameter, and resembles the tooth of a crocodile rather than that of a man. The name is from Dhata-Dhata. It is greatly revered by the Singhalese Buddhists. Its history is given in the Daladawansa.—*Tennant.*

DALAI LAMA. See Delai Lama; Tibet.

DALAL, a tribe of Jats in the Rohtak Zillah.

DALAN. Pers. A hall with an open front, used by Mahomedans of rank as a reception room. It is the verandah, or roofed but otherwise open space in front of a room.—*Ouseley's Travels*, ii. p. 11.

DAL BALLU GEERA. Can. A tree of Canara and Sunda, on the elevated plateau between Gungawali and Black River; does not reach a great size. Wood very strong and tough, and sought after for agricultural implements.—*Dr. Gibson.*

DALBEHERA. Uriya. The chief or head of the Goala and other castes.

DALBERGIA, a genus of plants belonging to the natural order Fabaceæ. Dr. Wight describes D. frondosa, latifolia, reniformis, scandens, marginata, rimosa, stipulata, Ujjainensis, robusta, and tamarindifolia. Dr. M'Clelland mentions that in Tenasserim there are four kinds of Dalbergia, all blackwoods, Yindike, Burm., all yielding a heavy timber which will not float, similar to sissoo. These trees are very plentiful in the Tharawaddy and Hlaine districts, also in the lower parts of the Tounghoo district. The timber seldom attains a very large size, and is generally found of a girth of three or four feet. D. cultrata, *Graham*, a tree of British Burma, furnishes a useful oil. D. alata, —? Tsouk-yoa, Burm., a tree of Moulmein, used for tool handles. D. ooata, —? Tsouk yo, Burm., a tree of Moulmein. A tough wood, much used for tool handles.—*Cal. Cat. Ex.* 1862.

DALBERGIA FRONDOSA. *Roxb.*

D. arborea, *Heyne.* Erra pachchari; Pedda sopara, Tel.

In Ceylon, not uncommon in the central provinces and elsewhere up to an elevation of 3000 feet. Grows in the Godavery forests and in the Circars; also in Pegu, where it attains a girth of four feet and upwards; is taller and straighter than the sissoo, and furnishes a strong, useful timber.—*Fl. Andh.; Beddome; M'Clelland; Thw.*

DALBERGIA LATIFOLIA. *W. and A., Roxb.*

D. emarginata, *Roxb.* | Rosewood tree.

Shwet sal; Sit sal, Beng.	Thoda gatti, . . . Can.
Yendike? . . . Burm.	Blackwood tree, . . Eng.
Sissoo of . . Bombay.	Eruputtu; Iti, . . Tam.
Bitti; Biti, . . Can.	Irugudu; Jittegi, . Tel.

This tree occurs throughout India. It grows to an immense size, the trunk sometimes measuring 20 feet in circumference. It has a very dark, heavy, and strong wood, sustaining a weight of 515 lbs. Everywhere in Southern India this valuable wood has risen much in price, and in 1858 an experimental sowing was made at Nellumbur. The wood is extensively used for cabinet work, knees of vessels, agricultural implements, combs, etc. The wood of the centre of the trunk and large branches is greenish or greenish black, often mottled, or with light-coloured veins running in various directions. It is close-grained, admitting of the finest polish, and is employed in the Madras Gun-carriage Manufactory, for light field beams, cheeks, axle-cases, braces, perches, poles, splinter-bars, waggon perches and framing, light field spokes and felloes. For gun-carriages it is so valuable, that large plantations have been formed in waste places of the North-Western Provinces of Hindustan. In Malabar it is the magnificent tree from which the well-known Malabar blackwood is obtained, and planks 4 feet broad are often procurable, after all the external white wood has been removed. It is one of the most valuable woods of the Madras Presidency.—*Drs. Roxburgh, Wight, Gibson, and Cleghorn; Voigt; Beddome.*

DALBERGIA MOONIANA. *Thw.*

D. lanceolaria, *Linn. fl.* | Nadoong gass, . Singh.

A great tree, which grows in the southern and central parts of Ceylon, at no great elevation.—*Thwaites' Zeyl.* p. 93.

DALBERGIA OOJJAINENSIS. *Roxb.*

Tunnus; Tewus, . Mahr.	Nemmi chettu, . . Tel.
Ati muktamu, . . . Tel.	Tella motuku, . . . ,,
Manda motuku, . . ,,	

A tree 30 feet high, 7 or 8 feet in girth, grows in the warm valleys of the Himalayas, the Kheri

jungle, Dehra Doon, Kamaon, Panjab, Sirmore, in Oudh and the Godavery forests. Found both in the Konkan and inland Bombay forests; especially common in some parts of Kolwan, Kandesh, and the Satpura Hills. Its wood is of great strength and toughness, of a clear dark brown colour; heavy, tough, and durable; is used for naves of wheels, legs of bedsteads, helves of axes; especially applicable for cart-building, ploughs, etc.; seldom reaches a size sufficient to give a plank of 9 inches. The wood of that which grows on the Godavery is valuable, but the tree is rather rare there.—*Voigt; Fl. Andh.; Thompson; Useful Plants; Dr. Gibson; Captain Beddome.*

DALBERGIA PANICULATA. *Roxb.*

Patchalaywood, ANG.-TAM.	Porilla sopara, . . TEL.
Phassie, ... MAHR.	Tella pachchari, . . ,,
Putchalai maram, . TAM.	Tella patsaru, . . . ,,

This tree grows in Moulmein, Assam, Oudh, in the Northern Circars, in the Godavery forests, Coimbatore, at Courtallum, in the Mawul districts, and above the Ghats. In Coimbatore it attains a considerable size, and the timber is said to be strong, and fit for many purposes. It is rather common in most of the Bombay forests, both of the coast and inland. The wood there is light yellow, strong, compact, and fit for many purposes in house-building, agriculture, etc. But Captain Beddome tells us of Porilla sopara (Godavery), Tella patsaru (Circars), TEL., Dalbergia paniculata, that the wood is perfectly useless; it is arranged in rings with softer substance in between the layers. Voigt tells us that it is white and firm, but less useful than some of the other species. The character of the wood would thus seem to vary according to locality.—*Drs. Wight, Gibson, Voigt, Beddome.*

DALBERGIA ROBUSTA. *Roxb.*

D. Krowee, *Roxb.* | D. latifolia, *Gibson.*

This tree grows in Nepal, Assam, and Pegu, where it is very abundant, attains a girth of 4 feet and upwards, and is taller and straighter than sissu.—*Voigt; M'Clelland*, p. 10.

DALBERGIA SISSOIDES. *Grah.*

Rosewood, . . . ENG.	Biti maram, . . . TAM.
Blackwood, . . . ,,	Vitty maram, . . ,,
Eatty maram, . . TAM.	Kar-itti, ... ,,

It is a smaller tree than D. latifolia. Both yield a black wood, and in Madras are indiscriminately called rosewood. The wood contains much oil, which unfits it for receiving paint. Mr. Rohde says that this is one of our best woods for plain furniture, though at Madras it is said to cast about a good deal. Logs are almost invariably faulty in the centre. As a tough, strong wood, it will be found useful, whether curved or straight. Dr. Gibson does not recognise this as a species distinct from D. latifolia.—*Drs. Gibson, Wight, Cleghorn; Mr. Rohde.*

DALBERGIA SISSOO. *Roxb.*

Pterocarpus sissoo, *Roxb.*

Sissoo wood, . . . ENG.	Sheeshum, . . PANJ.
Sissoo, Shishum, HIND.	Yerra sissoo, . . . TEL.
Safeda, ... ,,	Sissowa, . . . URIYA?
Tali, ... PANJ.	

This tree grows in Bengal, Nagpur, Gujerat, in the hills about Nagotnah, and Kenheri jungles. It is the most valuable hard wood in the Panjab, and grows at 2000 to 4500 feet in the Himalayas. In Nagpur, logs of it are procurable from 10 to 15 feet long, and 2½ to 3 feet in girth, at 6 annas the cubic foot. It is said to attain a great size in Chanda, and is employed in ornamental work, domes of gharries, etc. It was introduced into the Madras Presidency from Bengal, at the recommendation of Dr. Wallich. Its rapid growth recommends it for avenues, for the tree attains perfection in 28 years; it is propagated and reared with facility, and early attains a good working condition of timber. The wood is greyish brown, with darker coloured veins, very strong, but said to be not very durable. It is used in Bengal for gun-carriages, and furnishes shipbuilders with their crooked timbers and knees, being remarkably strong, but not so durable as could be wished. In the Dekhan the wood is used principally, from its strength and natural bend, for native hackeries; when it can be procured long and straight, it makes good shafts for buggies. The wood of the Ajmir tree is very dark and beautifully veined, like rosewood. Flowering time, the beginning of the hot season; the seed ripens about the close of the year.—*Voigt; Captain Macdonald; Mr. Rohde's MSS.; Irvine; Riddell; Roxburgh; Thompson; Stewart; Cleghorn; Captain Sankey.*

DALCHINI. PERS. Cinnamon; the Cassia lignea of the species of Cinnamomum trees.

DAL-DAL, the name of Mahomed's mule; also of the horse of Ali, son-in-law of Mahomed.

DAL-DAL or Dahil. HIND. Bog, quagmire, quicksand.

DALECHAMPIA. Of this genus of plants Wight gives Capensis, Indica, and velutina. D. arborea is Galedupa Indica. D. bidentata, *Blume* (D. Indica, *Wight*; D. velutina, *Wight*), grows at Gonagama, on the lower Badulla road from Kandy, but is not common.—*Thw. Zeyl.* p. 270.

DALECHAMPIA POMIFERA. Douk-ya-mad, BURM. Met with on the banks of streams in the Pegu valley, particularly in the Pommah Choung. The trees are from 3 to 4 feet in girth. Wood red or dark brown, and adapted for cabinet-making.—*Dr. M'Clelland.*

DALHI. HIND. Arable land.

DALHOUSIE. James Andrew Broun Ramsay, tenth Earl and first Marquis of Dalhousie, was born on the 22d April 1812. He was a third son by the heiress of the Brouns of Colstoun in Haddingtonshire. He was educated at Harrow, and subsequently at Christchurch, Oxford, where he was fourth class in classics (1833), and graduated M.A. in 1838. By the deaths of his two elder brothers he became Lord Ramsay in 1832. He was employed in the Ministry of Great Britain, and was Governor-General of India from the 12th January 1848 to the 29th February 1856. The period of his administration was marked by great changes, and posterity has styled him the Great Proconsul. He was naturally prompt and imperious; he was prompt to vindicate his authority, and he had quite a special faculty for making his displeasure dreaded. He never failed to reward good service, though even his friends regarded him with a certain awe; and it used to be said of him, that 'although his height was not imposing, he looked every inch a king.'

On reaching Calcutta, Lord Dalhousie proclaimed his policy: 'We are lords paramount of India, and our policy is to acquire as direct a dominion over the territories in possession of the native princes, as we already hold over the other half of India.'

Soon after his arrival, British officers were murdered at Multan, and Mulraj its governor was in revolt; the Sikhs were defeated, and the Panjab annexed to the British dominions. In 1852 the Government was involved in hostilities with Burma, where British traders had been insulted by the officers of the king of Ava, and in a few weeks the entire coast of Burma was occupied, and before the close of the year the province of Pegu was annexed. From that time to the end of his administration, the Indian Empire enjoyed comparative peace.

During his time a Legislative Council was organized, prison discipline was improved, a system of uniform and cheap postage was introduced, a portion of the Peninsula intersected by railway, and all the large towns brought into immediate connection by means of the electric telegraph, laid down by Dr. (Sir William) O'Shaughnessy, 4000 miles having been constructed and placed in working order between November 1853 and February 1856. The production of cotton, tea, and flax, the breeding of sheep, and the improvement of agricultural implements, all received his attention. The development of the resources of the country in iron, coal, and other minerals was a matter on which he bestowed peculiar care; and measures were also taken for the preservation of the forests, and for making their produce available. A new and uniform survey of the districts was commenced, and the limits of feudatory states accurately defined. Irrigation on a large scale was attended to in Sind, Madras, and Bombay; the navigation of the Ganges, Indus, Nerbadda, and Brahmaputra was improved; grand trunk roads were carried to Dehli, through the Panjab, and to Patna, and others made in Pegu and Sind. A road was also constructed to the frontiers of Tibet, commencing from the plains of the Sutlej, and another put in progress from Arakan over the Yoma ridge to Pegu. The most stupendous work, however, was the Ganges canal, carried out by the skill of Sir Proby T. Cautley. The department of public works was reformed throughout, and colleges founded to train young men specially in civil engineering. Schools and colleges were established and placed under Government inspection. Strenuous efforts were made for the eradication of sati, thuggee, and infanticide. The condition of the British soldier was greatly improved. Provision was also made for both Protestant and Roman Catholic worship on more equal terms, and extensive changes were made in matters of criminal and civil justice. The government of each Presidency, each lieutenant-governor, and the chief officer of every province, were required to send in to the Governor-General an annual administration report of the chief events that occurred within their several jurisdictions, in order to test the progress made by the nation at large. In his last minute, he said: 'No prudent man, who has any knowledge of Eastern affairs, would ever venture to predict the maintenance of continued peace within our Eastern possessions. Experience—frequent, hard, and recent experience—has taught us that wars from without, a rebellion from within, may at any time be raised against us, in quarters where they were the least to be expected, and by the most feeble and unlikely instruments. No man, therefore, can ever prudently hold forth assurance of continued peace in India.' For his success in the Panjab, Lord Dalhousie was raised to a marquisate in 1849; and on his return to Britain in May 1856, the East India Company settled on him a pension of £5000 a year. He had previously been appointed to the wardenship of the Cinque Ports on the death of the Duke of Wellington. He died on the 19th December 1860.

DALHOUSIE, municipal town, cantonment, and hill sanatorium in the Gurdaspur district of the Panjab, in lat. 32° 31′ 45″ N., long. 76° 0′ 15″ E. It occupies the summits and upper slopes of three mountain peaks of the main Himalayan range, east of the Ravi river. The hills consist of rugged granite, and the houses are perched in a few gentler slopes among the declivities.—*Imp. Gaz.*

DALI. HIND. From Daliah, a branch, a tray, on which complimentary presents of food, fruits, or vegetables are placed.

DALIMA. HIND. A class of Tuga in Muradabad.

DALIMBA, a hard, granular, coarse stone of Cuttack, worked into utensils of various kinds.

DAL-KOHLU, a sugar-cane press, in Ambala and Cis-Sutlej.

DAL-LA, or Giant's Peak, in Bhutan, N. of Tanong, in lat. 27° 50′ N., and long. 92° 34′ E. The top of the peak is 22,495 feet above the sea, as trigonometrically measured from Gohatti. This peak is the prominent feature in the Himalaya panorama of Central Assam.—*Schlag.*

DALLAL. HIND. A procurer, a horse-couper, an agent, a broker, a go-between. Dallalah, a courtesan. The Delilah of the Bible, a female go-between.

DALMA, a range of hills in Manbhum, occupied by the Kharria and Paharia. Dalma, its highest hill, is 3407 feet above the sea.

DALMAN, a town on the right bank of the Ganges, 16 miles south of Rai Bareli. It is said to have been founded about the 4th century A.D., by a brother of the raja of Kanouj. It was long in the possession of the Bhar, and the surrounding country was the scene of a protracted struggle maintained by that tribe against the Mahomedans. About 1400 A.D. the Bhar were almost annihilated by Sultan Ibrahim Sharki.—*Imp. Gaz.*

DALME-KATTEA. SINGH. Wood-moth, Eumeta Cramerii.

DALOSINGHA, a tree of Ganjam and Gumsur. Ploughshares are sometimes made of it.—*Captain Macdonald.*

DALRYMPLE, ALEXANDER, Hydrographer to the East India Company. He died 1807. He was an active writer.

DALUWAN or Dalaman, the bark of the Broussonetia papyriferas, prepared for writing on.

DALYELL, N. A., and A. Gibson, joint authors of Dalyell's Bombay Flora. Mr. Dalyell contributed several memoirs on botanical subjects, and on the influence of trees on climate.

DAM. ARAB. Also Dama, a prayer. 'May it be perpetual.' Dam daulatūhū, dam zillūhū, 'May his prosperity continue.'

DAM, a copper coin of India, now obsolete. In Akbar's time 40 dam of copper were equivalent in account to one rupee, and the dam of copper is itself defined at 5 tank, or 1 tola 8 mashas and 7 rati in weight, which at 186 grains per tola is equal to 323·5625 grains. There seems to have

been 9·29 chitals in each dam, and in the Sheer Shahi rupee 371·8 chitals, instead of the old 320 divisional coins of that name and value, which went to the lighter silver piece of former days. In the Ayin-i-Akbari, and in most revenue accounts, the dam is considered the 40th part of a rupee, but to the common people it is known as the 50th of a tuka; 25 therefore go to a pysa, and 12½ to an adhela. In the time of Alamgir, 46⅔ dam, and later, 80 and 90 dam, went to a rupee.

DAM. PERS. Price, cost. Be-dam, priceless.

DAMA. SANSK. A house. It is Domos, GR.; Domus, LAT.; Domii, SLAV; Daimah, CELT.—*Müller's Lectures*, p. 224.

DA-MA, spelled Mran-ma or Myamma, is that portion of the Burmese race who occupied the country above Prome.—*Mason*, p. 62.

DAMALCHERRY, a pass about 30 miles N. of Ambur, leading from Mysore to the Karnatic. On the 20th May 1740, Nawab Ali Dost fell here in action against the Mahrattas.—*Orme*.

DAMAN is a Portuguese settlement just 100 miles north of Bombay. It has a population of about 50,000, and an area of 82 square miles. The Portuguese, soon after its capture in the 16th century, converted a mosque into a church, and have since built eight other places of worship, besides docks and yards for shipbuilding. The settlement has two forts, and is ruled by a governor with civil and military functions, under the viceroy at Goa. There are some fine teak trees and other timber in the neighbourhood; and in former days Daman was noted for dyed piece-goods, and a flourishing trade in opium with China. The town on the right bank of the river Daman was sacked by the Portuguese in 1531, rebuilt by the natives, and retaken in 1558 by the Portuguese.

DAMAN-i-KOH is the name given to the low hills that form the basis of the higher ranges of the Himalaya, and in which such hill states as Kotahah and others are situated. It means the skirt of the hills, and is applied also to the skirt of the Santal Parganas, and also to the tract between the Suliman mountains and the west bank of the Indus, comprising portions of Dehra Ghazi Khan, Dehra Ismail Khan, and Kohat districts, between lat. 28° 40′ and 33° 20′ N., and long. 69° 30′ and 71° 20′ E.

DAMARA. Wilson's History of Kashmir describes this as an ancient people, as a fierce, intractable race, murderers of king Chakra Varma, and who opposed Lalata Ditya in his advance to the north or Uttara-kuru.

DAMARA or Damru, supposed to be a small hand-drum or rattle, usually seen in the hands of Siva or his avatars. This definition of the emblem is, however, doubtful; it has the appearance of an hour-glass, and rattles of this form are sold in all the bazars of India, and used by religious devotees and others to attract attention. —*Cole, Myth. Hind.* p. 377.

DAMASCUS city is about 2 miles in length, is surrounded by a fortified enclosure, dating back to the time of Selim I., and which was built on the site of the old walls raised by the Arabs in 650. Damascus was the usual residence of the khalifs of the Ommiah dynasty. During the convulsions which at last overthrew the khalifs, it had many changes of rulers, and was destroyed by Timur, A.D. 1400. It has eighteen gates, one of them being called Bab-i-Paulous, or the Gate of St. Paul. Damascus contains many places of worship; the largest and finest being that dedicated to St. John the Baptist. It was thoroughly repaired by the khalif Walid in the year 86 of the Hijira; its doors are of bronze, and beautifully wrought. A Mahomedan tradition says that at the end of the world St. John the Baptist will descend into this building, while Jesus Christ will come to the temple of Omar at Jerusalem, and Mahomed, the prophet of God, to the temple at Mecca. In the great bazar to receive the caravans, from 1200 to 1500 camels may assemble. Damascus was the general rendezvous of from 40,000 to 50,000 pilgrims, who assembled there from all points of Ottoman Europe and Asia, and even from Persia and Turkestan, in order to go with the caravan to Mecca; but most of the pilgrims now go by the Suez canal. Damascus was formerly celebrated for its manufacture of sword-blades, brass work, and peculiar heavy silks of shot colours. The population of Damascus amounts to 180,000 — 130,000 Mahomedans, 30,000 Christians, Greeks or Latins, and 20,000 Jews. The schismatic Greeks have a church of their own, but the Catholic Greeks have not, and perform their religious duties in the three Latin monasteries, viz. the Holy Monastery, that of the Lazzarists, the successors of the Jesuit missionaries, and that of the Capuchins. The Armenians and the Syrians have each a particular sanctuary, and the Jews have three synagogues. Damascus is the residence of a first-class mullah, and of the Greek Patriarch of Antioch, who has forty-two archbishops and bishops under him. The Pasha of Damascus bears the title of Prince of the Pilgrimage, because he was formerly charged to accompany the caravan to Mecca. The plain of Damascus is covered with magnificent gardens, planted with orange and lemon trees, cedars, fig and apricot trees, and shrubs of all kinds. The Baradi, the ancient Chrysorrhœa, a pure and limpid river, divides itself into seven branches, and waters the town and its fine gardens. The nearest seaports are Beyrout and Saida.

DAMASCUS, a commercial and art term, applied to a variegated structure and appearance on iron and steel gun-barrels, daggers, sword-blades, where, as in the Koteli twisted gun-barrel trade, the barrel is made of twisted bars, and nothing can be imagined more elegant. Damascus swords present on their surface a variegated appearance of watering. The blade was formed by mixture in nearly equal proportions of the celebrated wootz and soft iron, which, being welded together and repeatedly doubled, gives the desired appearance. Daggers and sword-blades thus formed are common among the retainers of the hill zamindars in the Northern Circars of the Peninsula of India, the handles of which, formed of iron, are frequently damascened in silver. Atkinson (Oriental Western Siberia, p. 120) says that Colonel Andsoff at Zlatavust had succeeded in manufacturing valuable Damascus blades, weapons combining edge and elasticity. The water was a succession seemingly of small bundles of almost parallel lines, occupying the whole breadth of the blade, the ends of the bundles crossing and mingling at the point of

junction. They are, however, a series of minute curves, forming together lines disposed in bundles articulated together, and dividing the length of the weapon into many sections. They have not the regular articulation of the articulated Khorasani blade, their lines are infinitely finer.—*Rohde, MSS.; Taylor, Saracen*, p. 130; *Powell.*

DAMASK.

Damaskwerk,	Dut.	Kamtschatnua,	Rus.
Venise,	Fr.	Salfftki,	,,
Damasten Tafelzeng,	Ger.	Tela adamascada,	Sp.
Teladamaschina,	It.		

This is a fabric woven in a loom, with figures of flowers or other objects. The art is said to have been brought from Damascus, hence the name.

DAMASONIUM INDICUM. *Willde.*

Parmi kulla,	Beng.	Nir veneki,	Tel.
Ottel-ambel,	Can.		

A pretty flowering annual, a native of sweet waters in India and Archipelago; flowers in the rainy season. The petals are of delicate white, and the long calyx has its corners ornamented with fringes, gathered into a kind of flounce or furbelow.—*Roxb.* i. p. 216.

DAMATHAT. Burm. The book containing the Burmese code of laws.

DAMAYANTI, daughter of Bhima, raja of Vidarbha, was famed for her radiant charms and exceeding grace. She chose Nala, raja of Nishada, at her Swayamvara, by throwing a wreath of flowers around his neck, and two children were born to them. Their story has been told by the poet. Nala took to gambling, and lost all but his wife, and was driven with her to the forest, where he urged her to return to her father's house, and, on her refusing this, he deserted her while asleep. She subsequently went to her father, and, failing to discover her husband's retreat, she declared she would hold another Swayamvara. To this the king of Oudh came, in a chariot driven by Nala, on which Damayanto recognised her husband, and they were happily reunited.

DAMBULA or Dambulla, a celebrated rock Buddhist temple near Matella, in Ceylon. The temple has been hollowed out of a hill of stone, and, from its antiquity, its decorations, and its magnitude, is by far the richest in that island. It is supposed to have been founded B.C. 246 by Dewanampiya Tissa, the ally of Asoka, and friend and patron of Mahendra, who introduced Buddhism into Ceylon. The roof of the vault is covered with fresco paintings. Some of the statues of Buddha are upwards of 40 feet in length; but there is an admixture of Buddhist and Brahmanical emblems, as the Makara, a monstrous idol, with the trunk of an elephant, the feet of a lion, the teeth of a crocodile, and the ears of a pig, is a prominent figure. It was first endowed 86 B.C. —*Tennant.*

DAMBU TAGH, mountains of the province of Iran, yielding the topaz, beryl, schorl, and gold.

DAM-DUM, a venomous fly in the Phangan pass, the bite of which causes severe irritation.

DAMIETTA, a town in Egypt supposed to have given its name to the dimity fabric. It was long ago suggested that the word dimity is the Greek Dimitos, so called because woven with a double thread in the woof. Professor Skeat has lent his authority to this etymology.

DAM-i-MADAR, called also Dhummul, is a popular ceremony with the agricultural and lower classes in India. It consists in jumping into a fire, and treading it out, with the exclamation of 'Dam-i-Madar, Dam-i-Madar!' that is, 'By the breath of Madar, by the breath of Madar.' It is devoutly believed that not a hair of these devotees gets singed, and that those who have practised the ceremony are secure against the venom of snakes and scorpions. Badi-ud-Din Shah Madar, in honour of whom this ceremony annually takes place, was, according to the Mirat-i-Madaria, a converted Jew. He is said to have been born at Aleppo in 1050 A.D., and to have come to India in the reign of Sultan Ibrahim Sharki, and, having taken up his abode between Cawnpur and Farrukhabad, and expelled therefrom an evil genius called Mukun Deo, who infested the place, he gave the name of Mukunpur to his residence, and was buried there in 1433 A.D., at the good old age of nearly four hundred years. The tomb, which is a handsome structure, was raised over him by Sultan Ibrahim. He is believed still to be alive, and hence is frequently styled Zinda Shah Madar. The prophet Mahomed gave him the power of habs-i-dam, or retention of breath, and hence arose his longevity, as the number of his respirations was diminished at pleasure. There is a class of fakirs called Madaria, after his name. They generally wear black cloth, and are much addicted to the use of intoxicating drugs. A fair is held at the tomb during the first 17 days of Jamadi-ul-Awal.—*Elliot, Supp. Gloss.* See Madaria.

DAMIT, a tutelary spirit of the Javanese.

DAMMAJI GAEKWAR, styled Shamsher Bahadur, the first of the Gaekwar family, who founded the dynasty in A.D. 1720. He was an officer under Khandi Rao Holkar. The Gaekwar made a treaty with the British in 1802. See Mahratta Governments in India.

DAMMAPADAN, a work in Pali, containing moral precepts.—*Hardy, Eastern Monachism.*

DAMMARA, a genus of trees found in Australasia, New Hebrides, New Caledonia, New Zealand, the Fiji islands, Java, Borneo, and Amboyna. Their names are,—Dammara obtusa, *Lindley*, of the New Hebrides and Queen Charlotte's group; D. australis, *Lambert;* D. orientalis, *Lamb.;* D. Nitiensis, Fiji; D. macrophylla, *Lindley*, of New Hebrides; D. Moorii, *Lindley*, of New Caledonia; D. robusta, *Moore*, of the Burnett and Mary rivers of N. Australia; D. ovata, *Moore*, of the Isle of Pines.—*Roxb.; F. v. Mueller; Bennett.*

DAMMARA AUSTRALIS, *Lambert*, is the Agathis australis, the kawri tree of New Zealand, first noticed by Captain Cook. Its wood contains a considerable quantity of resin, and appears to shrink little. The mean girth of the tree is from 3 to 6 feet, and it is from 90 to 200 feet high. It is a close, even, and fine-grained wood of a very uniform texture; its colour is a light-yellowish brown, the lustre silky, the annual rings marked by a line of deeper tints of the same colour. It is used for masts and yards of ships, and seems admirably adapted for internal joiners' work. The bark thick, yielding tears of resin in great profusion. Enormous masses of a similar resin, many pounds in weight, are found in the soil in many places far from where these trees now grow, and are presumed to have the same origin. It is used in varnish-making. The perfectly straight trunk is clear of branches up to 80 or

100 feet, and a diameter 5 to 9 feet.—*Jam. Ed. Jour.* xiii. of 1825, p. 378; *Tredgold; Dr. Hooker; F. v. Mueller.*

DAMMARA ORIENTALIS. *Lambert.*

D. alba, Rumph.	Agathis loranthifolia, *Salis.*
Pinus dammara, *Lamb.*	

A tree of Amboyna; it yields dammer.—*Roxb.*

DAMME or Damma, in the Arafura Sea, is a high large island, 70 miles N.N.W. from Sermattan; the island is 15 miles long north and south, and at its N.E. extremity has a volcano, with hot springs.—*Horsburgh.*

DAMMER.

Pa-ma-yi, Lan-t'ang, CHIN.	Dummula, . . . SINGH.
Ral, Rala, . . . HIND.	Coongillium, . . TAM.
Damar, . . . MALAY.	Googhilum, . . TEL.
Yakshadupha, . SANSK.	Tala-gotso, . . . URIYA.

Dammer is a general name for the resins of several different trees, being applied to the Indian copal or gum anime of the Vateria Indica; to the New Zealand copal from the Dammara australis; to the hard brittle resin of the Dammara Amboyna; the brown resin of the Vatica robusta; to the black resin or pitch of the Vatica tumbugaia; and to the resins of species of Canarium, as Canarium pimela (Lan-t'ang, CHIN.), which yields the resin for the Chinese dammer. Agathis loranthifolia, *Salisb.*, grows on the lofty mountains of Amboyna, and, according to Dr. Wallich, in Tavoy. It is a very large tree, used in building. White dammer, a product of this tree, occurs in fragments of variable size, marked with reddish streaks, transparent, amber-like, brittle, with brilliant fracture, very inflammable, inodorous, and tasteless. It hangs from the branches, and resembles stalactites, the pieces being sometimes as large as the hand, and 4 to 8 inches long; some pieces are like anime resin. Dammer is found adhering to the branches, or in masses at the foot of the trees which yield it, or floating in rivers, drifted to them by the floods of the rainy season. It is produced in such abundance, and gathered with so little labour, that its market price seldom exceeds four or five shillings a hundredweight. The natives of the country apply it to most of the uses to which we put tar, pitch, and rosin.

Damar mata kuching, MALAY, Damar daging, and Damar batu, are gum products of the Malay Peninsula and of the Archipelago. Damar mata kuching, when mixed with the miniak kayu, or wood-oil, makes a durable varnish. Damar putch is white dammer, and Damar selo is another dammer.

The dammers of the Madras Presidency are obtained from trees of the genera Vateria, Canarium, and Vatica. The two former, viz. Vateria and Canarium, yield by far the largest part, if not the whole, of the dammers produced on the western coast of the Peninsula of India, whilst the Vatica genus yields the greater part of that collected in the northern and eastern districts.

The Black Dammer of the Western Coast is from Canarium strictum, the Carpoo coongilium of Ainslie, the Dammara nigra legitima of Rumphius, and the Canari of the Malcala. This occurs in large stalactitic-shaped masses, of a bright shining black colour when viewed from a distance, but translucent and of a deep reddish-brown when held in thin laminæ between the eye and the light. It is perfectly homogeneous, and has a vitreous fracture. Its shape appears to be due to the fact of the balsam having exuded in a very fluid state, and trickled down the trunk of the tree, where it gradually hardens by exposure to the sun, the fresh resin continuing to flow over that already hardened, giving rise to the stalactitic appearance of the huge lumps of resin, the outside of which much resembles the guttering of wax caused by placing a lighted candle in a draught. It is insoluble in cold, but partially soluble in boiling, alcohol on the addition of camphor; when powdered, it is readily soluble in oil of turpentine. Powdered and burnt on the fire, it emits a more resinous smell, and burns with more smoke, than white dammer. The size of the lumps of this resin together with its colour and the peculiarity of shape already mentioned, suffice to distinguish it from other Indian resins.

The White Dammer of the Western Coast is the Piney resin of the Vateria Indica and allied species of Linnæus and Wight, Choloroxylon daupadu of Buchanan and Ainslie, the Doopada resin of Mysore, and the Piney of the Malabar people. It has two varieties:—

Var. 1. Compact Piney resin, or first sort white dammer, or Indian copal, occurs in large lumps of all shapes, and varying in colour on the outside from a bright orange to a dull yellow, bearing evident marks of having adhered to the bark of the tree. It has a shining vitreous fracture, is very hard, and bears a great resemblance to amber. Its colour internally is of all shades, from a light green to a light yellow, the green tint predominating in the generality of specimens. It is more soluble in alcohol than black dammer, and burns with less smoke and a more agreeable odour. It is easily distinguishable from all other Indian resins by its superior hardness, its colour, and amber-like appearance.

Var. 2. Cellular Piney resin, or second sort white dammer, occurs either in small lumps or in large masses, generally of a shining appearance and balsamic smell. Has a very cellular structure, which is attributable partly to the mode of collection, and partly to the age of the tree. Notches being cut in the trunk of the trees sloping inwards and downwards, the resin collects in the cavity, and is either permitted to dry on the spot, or is collected and dried by the application of heat. It is of all shades, from light green to light yellow or white, and is usually translucent. Specimens are sometimes seen in which, from the desiccation having been improperly conducted, the resin is more opaque, of a dull green colour, and full of air-bubbles, presenting the appearance of having undergone a partial fermentation. This resin may be recognised by its cellular appearance and balsamic smell; but the balsamic smell, which is due to the volatile oil it contains, is gradually lost by long keeping or constant exposure to the air. On splitting open old and decayed trees, portions of a dark-coloured resin are often found, having the solid consistence of the first variety, but the inferior quality of the second.

The finest specimens of Piney resin are obtained by making incisions in the tree, and are in pale green translucent pieces of considerable size. The resin that exudes naturally usually contains much impurity. In most of its properties it resembles copal, but it possesses qualities which give it some advantages over the latter. Like copal, it is but slightly soluble in alcohol; but, as

Berzelius pointed out in the case of copal, it can be brought into solution by the addition of camphor to the spirit. It is easily soluble in chloroform, and thus might find a small application as a substitute for amber in photographers' varnish. It differs most advantageously from copal, by being at once soluble in turpentine, and drying also without the necessity of the preliminary destructive fusion required by that resin, a process which tends greatly to impair the colour of the varnish. The solution of the Piney resin in turpentine is turbid and milky, but by the addition of powdered charcoal, and subsequently filtering, it yields a solution transparent and colourless as water, and yields a varnish which dries with a purity and whiteness not to be surpassed. The solution in turpentine readily mixes with the drying oils. It is on these properties of the resin that its chance of becoming an article of trade will depend. In price it cannot compete with copal, when supply to the European market is regular and abundant. The ordinary price of the best copal in the English market is but £2, 10s. per cwt. Piney resin yields, on destructive distillation, 82 per cent. of an oil of agreeable odour, but not differing essentially from that obtained from much cheaper resins.

East Indian dammer, which is well known among varnish-makers, though frequently confounded with this, is the product of a very different tree, and is not produced in the Madras Presidency.

Dammers of the Northern and Eastern Districts.—Sal tree dammer, Vatica robusta and other species, occurs in sticks much resembling in shape the black dammer, but differing widely in colour and consistency. In colour it varies from a light yellow to a dark brown, the two colours being very frequently blended in the same lump, and giving it the appearance of having a regular grain. It is friable, and differs from the white dammer of the western coast in its inferior hardness, its opacity, and its peculiar form, and from the black dammer in its colour. There are extensive tracts of Vatica jungles in the Gumsur and Cuttack provinces. The Khand and Uriya races, living in and near these jungles, wound trees in several places; the resin issues, and is collected when sufficiently solid. The dammer collected from the decayed parts of the tree is of a dark colour. The tree is called Guggilam in Telugu, and Tala gotso in Uriya. The Khand and Uriya races make the leaves into the plates from which they eat their food, and also roll up tobacco in them to smoke like a cheroot. In time of famine, the above tribes live on a soup made from the fruit of this tree.

Vatica tumbuggaia grows also to a limited extent on the west coast, but yields little if any of the dammer collected there. It exudes an amber-coloured resin.

The White Dammer of Singapore is the product of Dammara orientalis. The Australian dammer, or kauri or cowri gum, or Australian copal, is obtained from the Dammara australis.

In Rhio Lingga Archipelago, dammer is obtained from the Meranti (Damar vatu), the Meranan (Damar-kruyong) and Balon trees (Damar mata kuching).

In Borneo, also, dammer is produced by many kinds of trees quite different from Marsden's Dammara orientalis. The white dammer is used for the same purposes as gum-copal. Damar mata kuching, or the cat's eye dammer, is the least common and most valuable, being beautifully transparent. The Damar daging, or flesh-like dammer, takes its name from its veined appearance, which causes it to resemble some kinds of agate. In Sumatra some of the trees producing dammer, yield valuable timber. The Damar laut tree, not mentioned by Rumphius, is employed at Penang for the frame timbers of ships, beams, and knees. Dammer is also the name of a gummy substance found floating on the sea off the E. African coast, which the people believe to be excreta of whales. Captain Burton supposes it to be unripe gum washed seaward during the rains.—*Powell; Beddome, Fl. Sylv.* p. 84; *Burton; Hawkes; Mad. Ex. J. Rep.; Dr. Wallich.*

DAMNI, also Daoni, HIND. An article of dress of Mahomedan women.

DAMODAR, a river of Bengal, which rises in the Chutia Nagpur watershed, and, after a S.E. course of about 350 miles, falls into the Hoogly just above the James and Mary Sands' shoal, which it has helped to deposit at the junction. Together with its tributaries, it forms the great line of drainage of the country stretching north-west from Calcutta to the fringe of the plateau of Central India. The Damodar river, tributary to the Hoogly, rises in lat. 23° 55′ N., and long. 84° 53′ E., and runs S.E. to Bardwan, S. to Diamond harbour. Its length is 350 miles. It runs through a rich country, which suffered in the middle of the 19th century with a terrible fever epidemic, that spread in 1868 into Birbhum. The Damoodah valley is rich in coal, which is very largely extracted. Damoodah is subject to sudden rises during the periodic rains, and has often burst its banks and devastated all around. One of the most severe inundations was in 1823, when this river overflowed the country for many miles, and many people perished. In that inundation a good-sized pinnace sailed through the Sooksagur bazar, and Chinsura and Chandernuggur were laid under water. The Santal race venerate the Damoodah.

DAMOH, a district lying between lat. 22° 10′ and 23° 30′ N., and long. 79° 5′ and 80° E. It is on the table-land of the Vindhyan mountains, and in its extreme length measures about 90 miles north to south, breadth 50 miles. The population is about 269,642,—aboriginal tribes, 32,528; Hindus, 237,204; Mahomedans, 8064; Buddhists and Jains, 5418; Gonds, 30,209 in 1872, the remainder consisting chiefly of Kurku; Brahmans, 21,378; the mass of the Hindu population consisting of Lodhi (33,342), Kurmi (20,664), and other inferior castes. The first known government was that of the Chandel Rajputs, whose seat of government was at Mahobar, in Bundelkhand. After the decadence of the Chandel, the country seems to have fallen into various hands at different times; but the most definite of the local traditions point to a period of Gond supremacy exercised from Khatola in Bundelkhand, the seat of a long since extinct Gond principality, and subsequently, as regards the southern portions of the district, from Chauragarh in Nerbadda valley, one of the capitals of the Mandla dynasty.

DAMOLA. HIND. A tola (180 grs.) of gold dust, a kanch.

DAMON and PYTHIAS, the two followers of Anaxagoras, are supposed by Major Cunningham to be the Sanskrit Dharmma, virtue or practical morality, and Buddha, wisdom. Even the word Pythagoras seems derived from πυθας, or Buddha, and ἀγορεύω, to expound or announce. He is said to have married Theano (Sanskrit Dhyana, devout contemplation), and by her had a daughter, whom he named Damo (Sanskrit Dharmma, virtue or practical morality), and who became a most learned Pythagorean.

DAMONU. URIYA. Grewia tiliæfolia, used for fishing-rods; abundant at Palicondah.

DAMPIER STRAIT, called Gamen or Gemi by the Dutch, is formed by Battanta island on the south and that of Waygiou on the north side, and is about 72 miles long from Cape Mabo to Point Pigot. It affords a good channel for vessels passing from the Moluccas to the Pacific, and is very generally selected.—*Horsburgh; Journal of the Ind. Arch.* June 1852, p. 308.

DAMRI, a small copper coin, formerly current in the Karnatic; all copper coin; any small money. In N. India, a nominal coin equal to 3½ or 3¼ dam, or between 2 and 3 ganda, so that a damri varies between 8 to 12 kauri.

DAMRI MASJID, a pretty little mosque, near the fort of Ahmadnaggur.

DAM-ul-AKHWAIN. ARAB. Dragon's blood, gum from Calamus draco.

DAMWAST. HIND. An inferior tribe of Rajputs in the Benares district.—*Wilson.*

DAN. HIND. An-Dan-Khan comprehend the sum of sovereign rights in Rajasthan, being allegiance, commercial duties, mines, etc.

DAN, two Persian words, one from Dāshtan, to hold or have, the other from Dānistan, to know. These two derivatives form several compound words, as Attar-dan, a scent-bottle, a perfume-holder; Kalm-dan, pen-holder; and, from Danistan, Na-dan, ignorant. Dan, SANSK., a gift; Dan-pan, charity, from Da, to give.

DANA. HIND. Wise. Danai, wisdom. Dowlat-i-Hind, o danai Faring, is a Persian phrase, meaning, Give me India for wealth, but Europe for knowledge.

DANA. HIND. Any grain or seed; a grain weight. Bihi-dana, Cydonia vulgaris; Hazar-dana, Euphorbia hypericifolia, E. thymifolia; Kala-dana, Pharbitis nil; Ram-dana, Amaranthus mangostanus; Shakar-dana, Colebrookia oppositifolia.

DANAGA. KARN. A cowherd, a shepherd.

DANAIS TYTIA, a butterfly with semi-transparent bluish wings, and a border of rich reddish-brown. This is exactly reproduced in Papilio agestor and in Diadema nama; and all three insects not unfrequently come together in collections made at Darjiling.

DANAKIL tribes occupy the low-lying waterless region between Abyssinia and the sea, trackless and uncultivated.

DANAVA, an inhabitant of the Hindu mythological Mount Meru, described by the Aryan immigrants as enemies of the gods; probably the early inhabitants of the countries with whom the advancing Aryans came in contact. See Avatar; Meru. Danava is also described as a tribe on the Cali, or children of Danu-Beli; their leader was named Danavendra; their origin unknown.

DANCALI, a country in the north-east part of Abyssinia, extending 300 miles along the coast of the Red Sea. The soil is unproductive; and its chief riches consist in fossil, salt, and honey.

DANCING has been practised from the most ancient times by many races. David, king of Jerusalem, danced naked in a religious rite. Later than this Socrates regarded the dance as a part of religion. Most of the uncivilised non-Aryan races of British India have dances, as the Bhil, the Juanga, the Khand, the Kol. In Southern India, also, the Jakkulwar and Jattiwartalawar are dancers. Of the races in S.W. Bengal, the Jadur, Jumbir, Terriah, Khariah, Karni Rasa, Dawa, and Bahni have war dances. The Kol of Nagpur have several dances, which are all more or less connected with some religious ceremony. Among the Santal, also, the dance is known, and the whole of their religious observances are generally performed and attended to by the votaries whilst in a state of intoxication,—a custom which reminds us of the worship of Bacchus among the Greeks and Romans.

Dancing is not practised in India by any Aryan race of Hindus nor by Mahomedans; but Persians, Afghans, Mahomedans of India, and Hindus of all sects, gladly witness the performances of professional dancing women. Many of the non-Aryan or aboriginal races of India, however, particularly those who have not greatly advanced in civilisation, have their national dances; and the Uraon and Ho of Central India are passionately fond of it. The Kodaga race of Coorg have a national dance. The Mahomedan dancers are all women, in bands called taifa, and are all public. The Hindu dancers are also all women, but do not associate with others than Hindus, most of them being attached to the temples.

Many of the dances of wilder races are solemn attitudinizing, moving in a ring, and locking up close to each other, often holding sticks.

The natives of Australia in their corrobery run in Indian file or sideways, and as they stamp the ground they grunt.

DANCING DARVESH, a name given to the Mevleviyeh, also to the Rafai order of the darvesh of Turkey and Egypt. See Darvesh; Ecsawiya.

DANCING GIRLS.

Hierodulæ	of BABYLON.	Deva-dasa,	SANSK.
Bayadere,	FR.	Basava,	TEL.
Kasbin; Kanchni,	HIND.	Jogin,	,,
Murali,	MAR.	Bogum wanlu,	,,
Balladuras,	PORT.		

Amongst the British in India, dancing girls is a term in general use to indicate the Hindu women devoted to the service of the Hindu idols in the temples, as also the bands of Hindu and Mahomedan women who practise singing and dancing for hire. For Hindu dancing girls see Deva-Dasa; for Mahomedan dancing girls, see Taifa. In the performance of the Hindu dancing girls in the two dances termed avancum and kancheene nacteum, their movements are combined with great agility, ease, and gracefulness, and with their nimble steps, the turning and twisting of their hands, eyes, face, features, and body agree, whilst they beat time with their feet. The feet generally placed flat, as they seldom dance on

their toes, the movements and position combine something of the waltz and Spanish cachucha,—they advance, retire, whirl around, drop down and rise again with ease and rapidity, whilst the several movements are kept in order with the twirling and twisting of their hands, features, body, etc. Some portions of the step resemble the hornpipe and jig, whilst they hop and skip from one leg to another, keeping time, now turning, now whirling, now capering, and now drooping, performing a coquettish pantomime with their antics, then affecting coyness, and dancing away from the assembly, by suddenly turning away as if careless of their allurements, but returning to the attack with greater vigour and increased blandishments. It is indeed surprising to witness their feats of strength and bodily powers of endurance, for, notwithstanding their frail make and delicate appearance, the amount of fatigue they endure, dancing as they do from nightfall to early hours of the morning, is astonishing. Their dancing is perfection; and the bodily fatigue they must undergo, from the attitudes and positions they combine in their dances, must be great. In what is called the sterria cothoo, athletic feats are performed,—resting their hands on the ground, and flinging their feet in the air with great rapidity, and thus twirling round and round, successively, performing various somersaults; lying full length on the ground with their hands and feet resting, contorting, twirling, and twisting their bodies in various ways; or, whilst resting on the hands and legs, with their backs to the ground and their chest and abdomen turned upwards, drawing the hands and feet as close together as possible; whilst their bodies are thus arched they, with their mouths, will pick up rupees from the ground. In this arched position, beating time with their hands and feet, they work round and round in a circle. During their performance they join their attendants in the songs that are sung, and regulate the various movements of their bodies to the expression given vent to in the song.

Modiye dūcūrāthū.—In this dance the word 'mod' is a term used to designate a craft or enchantment practised by a conjuror, who places or hides money or other valuables in a certain place, and often in the presence of his opponent, with the view of testing his ability, and challenges him to remove it, which the opponent endeavours to do by playing on a pipe termed 'maked;' and if he be not equally skilled, he is struck to the ground in a mysterious manner, sick and ill, frequently bleeding from the nose and mouth profusely. The dance is in imitation of this, by the girl playing on a 'maked,' dancing at the same time, and throwing herself on the ground; the right leg is stretched out at full length, forming a perfect angle with her body out on one side; on the other, the left leg, doubled under the knee, is stretched out in like manner on the opposite side, producing a most singular appearance, and as if there were no joint in the hips.

Colu auteum, or the stick dance, is formed by a number of girls of the same age, size, and dress, numbering from twelve to twenty-four or more, each having two sticks, one in each hand, about eighteen inches long, well turned, and painted with circular stripes of yellow, green, and red. Either to the roof, or across a piece of wood raised in support for the purpose, a stout skein of thread in different colours is suspended, and having as many strands as there are girls; the free ends of the strands are tied to the ends of the painted sticks each holds; the dance begins with the usual song and accompaniment of music, when each girl, striking her sticks, dances a kind of jig and hops from place to place, exchanging places with each other. This is done with such order and regularity, that the several strands are plaited with the utmost evenness into a stout cord or tape of many colours, according to the design. At a sign from the conductor, the same is undone with equal order and regularity, the girls dancing and exchanging places with each other without a single mistake or false step, either in the plaiting or unplaiting of the strands of thread. The readiness, grace, and ease with which the several movements are effected, are worthy of admiration. At some places, on festive occasions, during the peregrinations of the Hindu idol around the town in procession, these girls perform the stick dance on a platform, which is carried and precedes the idol. More frequently these and other dances are performed on foot in front, and at some distance from the procession, which stands still at a certain distance to allow of its being properly carried out.

Mahomedan dancing women attitudinize with their feet and hands, and move their eyes and change the expression of their face to indicate various emotions.

DAND. PUKH. A tank.

DAND. HIND. A fine, a mulct.

DAND. HIND. The support of the canopy on an ekka, etc.; a rod, an oar, a staff or wand. Hence Dandi, an oarsman.

DANDA. SANSK. Originally imports a staff, and amongst Hindu ascetics it figuratively signifies moral restraint, exercised especially in three ways, in the control of speech, body, and mind, or in word, deed, and thought. A joint reference to the literal and figurative sense of the term has given rise to the religious distinction termed Danda Grahanum, the taking up of the staff, or adopting the exercise of the moral restraints above mentioned, and carrying, as emblematic of such a purpose, either one, or, as in the Tridandi, three small wands or staves. Tridandi designates both these characteristics of the order.—*Wilson.*

DANDAKARANYA, or the forest of Dandaka, is celebrated in Indian story. Varaha Mihira, the great astronomer, mentions Dandaka along with other places in the south of India as follows:—Kerala, Karnata, Kanchipura, Konkana, Chinnapattana (now Madras), etc. In this list Dandaka is distinct from Konkana, or the Upper Kistna, and may, General Cunningham suggests, therefore perhaps be identified with the lower valley of the Kistna, of which Dhandakakata was the capital. Gen. Cunningham (Anc. Geog. of India, p. 544) seems to have been led to this surmise from M. Vivien de Saint-Martin having stated his suspicion that the name of Dandaka is connected with Dhandakakata. But there were in ancient times great forest tracts stretching across the Peninsula of India from east to west, portions of which still remain, and several parts of them seem to have been so designated. That described in the Ramayana was a forest near the Godavery river, in which Rama was residing when Ravana carried off Sita.

It has also with much probability been supposed to have been a forest anciently covering the south of the Peninsula, now the territory of the Marava and Kollari, whose features are often like those of the baboon, hence the origin of Valmiki's monkey army. The forest tract in the Syhadri mountains, in the Dekhan, and the plateau of Chutia Nagpur, have also been pointed to as parts of Dandakaranya.—*Cunningham's Anc. Geog.*

DANDA KASANWALA. HIND. Sticks used for wringing out skeins of silk from the dye vat.

DANDASA. HIND. Astringent barks of Juglans regia and other trees.

DANDASULU. TEL. Village watchers.

DANDAWAT, Dandam. SANSK. From Danda, a walking-stick. A Hindu form of salutation, bow, obeisance, prostration, performed amongst Hindus to each other, and is daily seen from a Hindu of inferior caste to a Brahman or higher caste. It consists in joining the hands with the tips of the fingers pointed upwards, and raising the hands so joined to the forehead. It seems the same as the Anjali (SANSK.), Hindu form of respectful obeisance. The head is slightly bowed, the palms of the hands are brought together, and raised laterally to the middle of the forehead, so that the tips of the thumbs only are in contact with it.—*Hind. Theat.* ii. p. 108. See Ashtanga danda.

DANDA-ZANI, HIND., literally stick-beating, a mode of torture said to have been practised by the subordinate officers in the private domains of the raja of Benares.

DANDELION. Pu-kung-ying, CHIN. The Chinese plant is said to be Leontodon taraxacum, also L. Chinense. It grows to the north of the Meikong hills.

DANDH, or 'Kolab,' in Sind, a tract of low land flooded by the inundation, partially or totally dry during the cold season, and at all times a hotbed of miasma.—*Burton, Scinde*, p. 377.

DANDHU PUNT. In the north of India, Baji Rao, the ex-Peshwa, who had been dethroned in 1818, lived on till 1853 in the enjoyment of his annual pension of £80,000. His adopted son, Dandhu Punt, styled the Nana Sahib, inherited his accumulated savings, but could obtain no further recognition. When the Bengal native soldiery mutinied and the people rebelled, his cruelties at Cawnpur to helpless women and children has made him execrated. He fled, and is supposed to have died in the Terai.—*Imp. Gaz.* iv. See Nana Rao.

DANDI. HIND. A Hindu sect who worship Siva, and represent the fourth, Asrama or mendicant, life, into which the Hindu is to enter, after passing through the previous stages of student, householder, and hermit. He shaves his hair and beard, wears only a cloth round his loins, and subsists on food obtained ready dressed from the houses of Brahmans, once a day only. Any Hindu of the first three classes, of student, householder, and hermit, may become a Sanyasi or Dandi. Indeed, in these days, a Hindu of any caste may adopt the life and emblems of this order. These constitute the Dandi, simply so termed, and are regarded as distinct from the primitive members of the order, to whom the appellation of Das-nami is also applied, and who admit none but Brahmans into their fraternity. But the Brahman can pass from any one of the first orders to the last at once. He becomes a Sanyasi, abandoning all sensual affection. The Dandi is distinguished by carrying a small dand or wand with several knots on it, and a piece of cloth dyed with red ochre, in which the Brahmanical cord is supposed to be enshrined and attached to it. The Dandi are followers of Sankaracharya, and are a numerous order of religious mendicants, many of whom have been eminent as writers on various subjects, especially on the Vedanta philosophy. They are divided into ten classes, hence their other name Das-nami, each of which is distinguished by a peculiar name, as Tirtha, Asrama, Vana, Aranya, Saraswati, Puri, Bharati, Gir or Giri, Parvata, and Sagara, which is added to the proper name of the individual, as Purushottama Gir, or Bodhendra Saraswati, etc. They are hence known collectively as the Dasmani, or ten-name Gosains. Of these, only three and a half tribes, the Tirtha, Asrama, Saraswati, and part of Bharati are now considered pure Dandi of Sankaracharya; the other six and a half members of the Das-nami are called Atit. They have abandoned the staff, the use of clothes, money, and ornaments, prepare their own food, and admit members from any order of Hindus. They are often collected in maths as well as the Dandi; but they mix freely in the business of the world, carry on trade, and often accumulate property, and they frequently officiate as priests at the shrines of some of the deities. Some of them even marry, and are then styled Sam-yogi. The Dandi are to the Saiva sect what the followers of Ramanuja are to those of the Vaishnava faith. Sankara's Dandi are sufficiently numerous in and about Benares.—*Wilson.* See Danda; Hindu.

DANDI, author of the Dasa-Kamara-Charita, or the Adventures of the Ten Princes, is supposed to have lived about the end of the 11th century. The scene is laid in Pashpapuri, a city of Magadha, then ruled by Raja Hansa, whose queen's name was Vasumati. It is a pleasing story in harmonious verse, arranged into two parts. The first, containing five chapters, ends with the marriage of the principal hero; the other has eight, and contains the adventures of the same prince and his companions. Unscrupulous deception, ready invention, extreme credulity and superstition, and disregard of human life, are strongly illustrated.

DANDI. HIND. In the Simla Himalaya, a hammock-shaped conveyance for travellers, slung on a pole, with straps for the feet and back, and carried by two bearers. It is a light litter suited for hill travelling.

DANDI BUTI. HIND. of Beas. Cleome ruta.

DA-NEE. BURM. Nipa fruticans.

DANG, a hill or precipice, the summit of a mountain, as Lal-dang. In Dehli, and generally in Upper India, the word is used to signify the high bank of a river. It is provincially corrupted into Dhang and Dhayung; the forest or jungle tracts in the Syhadri range are so called. A wild, a thicket, a place overrun with bushes, a tract of country, along, near to, or below the Ghats, not mountainous, but interspersed with hills so as to leave no extent of level ground. Dangi, HIND., a forester. Dangs is the designation of the tract of country situated within the limits of the Political Agency of Kandesh, bounded N.W. by the petty state of Warsavi in the Rewa Kanta Agency.—*Elliot; Imp. Gaz.*

DANGA-GURGUR. Beng. Coix gigantea.

DANGAH. In Persia, a custom exists of dividing fields, villages, whole districts, and even the water for irrigating the fields, into six parts, which are further subdivided into two unequal parts, the one containing four parts, Char-dangheh, and the other two parts, Do-dangheh.

DANGAH. Hind. Rebellion, riot, uprising.

DANGAR, in the Bombay Presidency, rice grown in the kharif or monsoon months. It is sown in small beds, and transplanted in July and August into beds which have been highly manured, flooded, and repeatedly ploughed. The crop ripens in October, yielding 20 to 40 seers the bigha.—*Gloss.*

DANGAREE, a coarse cotton cloth in use in India for common towels.

DANGAST. Hind. A class of Rajputs in Ghazipur.

DANGI. Mahr. A forester; an inhabitant of a low, hilly, and jungle tract. Also a tribe of Rajputs inhabiting the woody districts of Eastern Malwa; also a name given to the Bundelas.

DANIEL. Mr. Layard says his tomb was preserved amongst the ruins of Susa, or in a valley of the Bakhtiyari mountains. Daniel-i-Akbar, a name of Susan or Sushan on the Karan river. See Luristan. The Arabs made no opposition to Baron de Bode entering the chapel in which the coffin of Daniel is said to be deposited, on learning that Christians as well as Mahomedans acknowledge him to have been a prophet.—*De Bode's Travels*, ii. p. 190; *Layard, Nineveh*, i. p. 252. See Susa.

DANK. Hind. Jewellers' foil.

DANT. Hind. A tooth. Dant-tinka, an ancient form of deprecating anger, alluded to in the inscription on the lat of Firoz Shah at Dehli. The supplicant takes a straw or bit of grass in the mouth and stands on one leg. It is meant to imply that the supplicant is as the offended person's cow.—*H. Elliot.*

DANTA PURA, the modern Puri. A tooth (dant) of Buddha was sent there after his death and cremation. After lying there 800 years, it was, A.D. 311, sent to Ceylon, where, as is said, it still remains.

DANTI. Hind. A sickle, perhaps a corruption of Durantee.—*Elliot.*

DANTIWARA, a village in the Bastar state. It derives its importance from a celebrated temple to Danteswari or Kali, the household goddess of the rajas of Bastar for many generations. It is said that Meriah sacrifice used to be practised here in former years; and in front of the shrine is the stone pillar or block to which the animals now substituted are tied up before being killed.

DANU or D'hanu or D'hanao, a rude Burmese tribe near M'we-yen.

DANUK, a low tribe in Behar and the Upper Provinces of India, fowlers, hunters, also predial slaves.—*Wils.*

DANUSHA, the unerring bow, the 11th article produced by churning the ocean. See Karma.

DANYA. Maleal. Coriander seed.

DAOUDI, believers in the divinity of king David among the Bakhtyari in Persia. The Georgians in Bokhara, though for centuries resident there, inwardly are Christians, outwardly Mahomedans.—*Wolff's Bokhara*, i. p. 54.

DAOUDPUTRA, a Mahomedan tribe who claim descent from the khalif Abbas, but supposed to be from Daoud, the first of the family who acquired a name. They are said to be Baluch changed by a long residence in Sind. They moved from Bahawulpur and seized land on the Sutlej, reducing the remains of the ancient Lungga and Johia, and introducing the Sind system of canals of irrigation; and both banks of the river below Pakpatan bear witness to their original industry and love of agriculture. Daoudputra is applied both to the country and to its possessors, the children of David. Daoud Khan is said to have been a native of Shikarpur, west of the Indus, who drew upon himself the arms of Kandahar. Unable to cope with his opponent, he abandoned his native place, passed his family and effects across the Indus, and followed them into the desert. The royal forces pursued, and, coming up with him at Sootialloh, Daoud destroyed his families, who impeded his flight, and faced his foes. They, appalled at this desperate act, deemed it unwise to attack him, and retreated. Daoud Khan, with his adherents, then settled in the Kutchi, or flats of Sind, and gradually extended his authority into the thul. He was succeeded by Mubarik Khan, who deprived the Bhatti of the district called Khadal, and settled in their chief town, Derrawal, founded by Rawul Deoraj in the eighth century. Derrawal was at that time inhabited by a branch of the Bhatti, broken off at a very early period, its chief holding the title of Rawul, and whose family since their expulsion have resided at Gurialah, belonging to Bikanir. The Daoudputra are to be met with in various parts of Sind.—*Tod's Rajasthan*, ii. p. 321. See Bahawulpur; Jut.

DAPHLA, Dophla, or Duffla, a tribe in a tract of country on the N.E. frontier of India. It lies north of Durang and Lakhimpur districts, in the province of Assam. They call themselves Bangni, a word signifying 'man' in their own language. In the cold season of 1874–75, an armed expedition was marched into the hills to recover captives.

DAPHNE, a genus of plants of which several species grow in India. They are of the natural order Thymalaceæ. A daphne grows in the Kashmirian mountains allied to D. gnidium and D. oleoides. It is essentially different from D. cannabina, from which, in Nepal, a paper is manufactured according to the Chinese manner. Acrid and dangerous properties appear to be common to them all; some species are remarkable for the toughness of their fibre, and for the economical purposes to which they are applied. From D. cannabina is prepared the best kind of writing paper in China, according to Loureiro; but in Nepal daphne paper is very brittle and bad. At the Great Exhibition of 1851, a huge sheet of Nepal paper was exhibited by Colonel Sykes. The lace-bark tree, D. lagetta, now Lagetta lintearia, of the West Indies, is remarkable for the beautiful net-like appearance of its several easily separable layers of bark, whence it has received its English name. A plant common in English gardens, and used in medicine on account of its acridity, is the D. mezereum of botanists.—*Bengal Disp.* p. 531; *Honigberger*, p. 268; *Eng. Cyc.*

DAPHNE CANNABINA. *Wall.* Paper shrub

D. bholua, *Wall.* | D. papyracea, *Wall.*
D. odora, *Thunb.*

Niggi, Jeku, . . Hind. | Mahadeo ka phul, Hind.

A small evergreen perennial shrub, somewhat like a laurel, which bears poisonous berries. It

grows in Nepal, Sikkim, in Kamaon at 5000 to 9000 feet, the N.W. Himalaya generally at from 3500 to 8000 feet. It is with this shrub that the Nepal paper is made; and in Kamaon, etc., large quantities are manufactured from the purple-flowered variety. The bark is boiled in a metallic pot with oak ashes, which are highly alkaline. The softened bark is then pounded with a mallet in a stone mortar, till reduced to a pulp like dough. This pulp is churned with water into a very thin paste, until it lose all trace of fibre, and will diffuse and settle smoothly. In this state it is poured into a coarse sieve placed over a frame, with a cloth bottom floating on water. The sieve stops the coarse pieces, allows the fine emulsion to pass through, and then by agitation this is smoothly deposited over the cloth. Removing the frame, the water filters away, and the pulp dries rapidly by placing the frame before a fire.

The paper is subsequently polished by friction with a shell or piece of hard wood. Sheets have been made many yards square. It may be purchased at Khatmandu at 17 annas sicca for 3 seers. Bricks of the pulp are sold from 8 to 10 annas for 3 seers. The greater part of the paper is made by cis-Himalayan Bhutiah, east of the Kali river. The manufacture seems to have been introduced from China about the 14th century. This unsightly paper is much overrated. But it is tough when kept dry; can be used like cloth for wrapping up dry substances; and it can be used after having been saturated with water, provided it be carefully dried within a reasonable time after it has been wetted. The dried bark may be substituted for D. mezereum. The bazar mezereon is almost always inert from age. In Chumba, the flowers appear to be hung up as offerings in temples. — *J. L. Stewart; O'Sh.* p. 531; *Beng. Phar.* p. 279; *Cleghorn, P. R.*

DAPHNE MEZEREUM. *Linn.* Spurge-olive.

Mazrium, Adada, .	ARAB.	Kameela, ...	GR.
Iskhes, ...	,,	Mazriun, . . .	PERS.

The berries are brisk but unsafe cathartics. Fresh bark is counter-irritant and external stimulant; the dried bark is a stimulant alterative in syphilitic, rheumatic, and scrofulous maladies. It is frequently combined with sarsaparilla, as in the Lisbon diet drink.—*O'Sh.* p. 530.

DAPHNE OLEOIDES. *Schreb.*

D. mucronata, *Royle.*		Kutti lal, Kanthan,	JHEL.
Kutal of . . .	HAZARA.	Gandlena, Gundalun,	RAV.

This paper shrub grows in Kunawar and in the Panjab, and is used medicinally, and said to be used in papermaking. It is in great abundance from a little above Kawai to Kaghan. The pretty red berries are not unfrequently eaten, but are said to be apt to cause sickness.—*J. L. Stewart; Cleghorn.*

DAPHNIDIUM CUBEBA. *Smith.*

Laurus cubeba.		Pih-ching-kia, . .	CHIN.

A plant of Cochin-China and the S. of China. The bark and berries are said to be used to cure fish. D. elongatum, *Nees*, and D. pulcherrimum, *Nees*, are trees of Darjiling hills.—*Kurz; Smith.*

DAPHNIPHYLLOPSIS CAPITATA. *Kurz.* A timber tree of the Darjiling hills.—*Kurz.*

DAPHNIPHYLLUM ROXBURGHII. *Baillon.*

Goughia Neilgherrense, *Wight, Icones.*
Nir chappay of the . . . BADAGA.

A good-sized glabrous tree, very common on the mountains on the west side of the Madras Presidency, and in Ceylon at elevations from 4000 feet upwards; also indigenous in Hong-Kong, Loo-Choo, Corea, and in Japan. The wood makes excellent fuel. Its foliage makes it highly ornamental for shrubberies, etc.—*Beddome, Fl. Sylv.*

DAPHNIS MYRRHÆ. *Smith.* Wu-yoh, CHIN. A shrub of several Chinese provinces, resembling the tea shrub. Root used medicinally.—*Smith.*

DAR. PERS., HIND. In the Persian, from Dashtan, to hold, a possessor, a place of abode; also from the Chaldee and Hebrew, meaning to encircle, to dwell. Used as a prefix and postfix to many compound nouns,—as Dār-ul-fana, the perishable abode, *i.e.* the world; Dar-ul-baka, the permanent abode, *i.e.* eternity; Amil-dar, a tax-gatherer; Ab-dar, watery, a water-cooler; Zamin-dar, a land-holder; Na-dar, a pauper (holder of nothing); Killa-dar, Chob-dar, Jawab-dar, etc.; Dar-us-shafa, a hospital; Dar-ul-khilafat, the khalif's residence; Dar-us-sultanat, the residence of a king, a capital; Dar-ul-harb, a country under a non-Mahomedan government, the seat of constant hostility or war, non-Mahomedans at all times being legitimate objects of attack.

Dar-ul-karar, a rhythmical addition to Kandahar. The words mean the abode of quiet, or city of stability. Throughout the East, Mahomedans often employ this kind of alliteration. After Choki, a chair, they will add choki-oki; to Bachah, a child, is added bach-kach; Hyderabad is farkhundah baniad, of happy foundation.

Dar-ul-karar, or city of permanence, is allegorically applied to the future world, as opposed to this, the Dunya-i-fani, the transitory world.

Dar-ul-khilafat, at Baghdad, the palace built by Al Mansur, the second khalif of the Abbas dynasty, and which his successors enlarged and furnished in the most costly manner. A piece of the Hajar-us-siah, or black stone of Mecca, was let into the threshold of the principal gateway, and a large curtain, made of the hangings of the temple, was suspended from a window of the gateway, to about the height of a man from the ground. Every person entering had to rub his eyes with the curtain, and to crawl over the black stone to avoid touching it with his feet.

DAR. PERS. A door, a gate; hence Dār-wān, a door-keeper, Dar-waza, a door, a gateway. Most cities in India have their gates named from the chief town to which they lead. Thus the Dehli gate, the Mecca gate.

DAR. HIND. A weight used in the tinsel-maker's apparatus.

DAR, a town near the valley of Kābul, with many sepulchral topes.

DARA. PUKHTU. A glen, a defile.

DARA or Durrah. MAHR. A body of the Pindari.

DARA, a king of Persia, son of king Darab, overcome by Alexander the Great.

DARAB, king of Persia, son of Kai Bahman or Ardeshir Daraz-Dast, Artaxerxes Longimanus.

DARABGIRD, one of the five ancient divisions, circles, or departments of ancient Fars. Darabgird was built by Darius I. It is 150 miles S.E. of Shiraz; is finely situated, and surrounded with orange and lemon and date groves; tobacco and other products are largely cultivated. The people have numerous flocks and herds. — *MacGregor*, p. 116.

DARAKHT. PERS. A tree.

Darakht-i-Azad, Melia sempervirens; Azadarachta Indica.
Darakht-i-Muql, Commiphora Madagascarensis.
Darakht-tamr-i-Hindi, Tamarindus Indicus.

DARANA. HIND. A scarecrow; from Darna.

DARARI-DANDA. HIND. A rolling-pin and concave receptacle used by native needle-makers for flattening wire.

DARBAND, a town of Daghistan, since 1813 in Russian territory. It has the citadel Naraini Kala, supposed to have been built by Alexander. The Caucasian wall extended from Darband. It was 21 feet high and 7 feet wide, and was intended as a defence against the Scythians from the north. It was first captured in 1722 by Peter the Great. Near it is the Kogre-Kafe mountain; at its foot the village of Dashkessine and the cave of the Dives, the dwelling-place of the giants of the Scripture. —*MacGregor; Porter's Travels*, i. p. 72; *Malcolm's Persia*, ii. p. 5.

DARBAR. HIND., PERS. A general reception by a ruler in British India, or by any officer of rank; a court, a royal court, a levee. Also the Sikh temple at Amritsar.

DARBHA. HIND. Poa cynosuroides, *Retz.*

DAR-CHINI. HIND. Barks of Cassia lignea, Cinnamomum iners, *Rein.*, Laurus cinnamomum, and C. albiflorum.

DARD, an Urdu poet of Dehli, whose name was Khaja Mir. He lived in the 18th century; his poems were of a plaintive and pathetic character, as the Nala-i-Dard, Ah-i-Sard, Soz-i-Dil, Shama-i-Mahfil.

DARD, a race lying along the Indus, to the westward of Ladakh, and to the N. and N.E. of the Snowy Range, who speak three distinct dialects. They use the Persian character in writing Dardu, the three dialects of which are called Shina, Khajuna, and Arniya. The Shina dialect is spoken by the people of Astor, Gilghit, and lower down in Chelas, Darel, Rohli, and Palas, on both banks of the Indus. The Khajuna, by the people of Hunza and Nagyr; and the Arniya in Yasan and Chitral. The Dard group of languages includes the Arniya, Astori, Gilghiti, Kalashamander, and Khajuna. The Kashmir people have their own peculiar language. In Gilghit, Astor, and Baltistan, the castes are Romu, Shin, Yaskun, Kremin, and Dum or Dom. The Kremin is a mixed race. The Shin or Shina and Yaskun were the dominant race. In the N.W. Himalaya, the lowest castes are the Dogra and Doma. Astor has an area of 1600 square miles, on the left bank of the Indus. Gilghit, in Tibetan Gyilgyid, has an area of 2500 square miles, on the right bank of the Indus. The Dard or Durd, the people who now occupy the country called Dardu, are supposed by Vigne to be the Dadicæ (Δαδίκαι) of Herodotus. Darada, a country in the Hindu Kush, bordering on Kashmir, is mentioned by Pliny. The people are the Dard, and are mentioned in the Vishnu Purana. The Kashmiri has decided affinities with the Dard tongue. The Balti people of Little Tibet say that Ladakh, Iskardo, Khopalu, Purik, Nagyr, Gilghit, and Astor are distinct Tibets. Papps is a drug from Ladakh, seemingly composed of dough, which the Dards add to an infusion of corn to make the beer called mo. Wine is largely made by the Dards. Men and women amongst the Dards eat together. When men drink plain milk together, it is as an oath of eternal friendship. At the conclusion of the mullah's reading the marriage service, the bride and bridegroom partake of a spoonful of boiled milk. Dards are fond of chaughan bazi, or hockey on horseback, also called polo. The game is called tope in Astor; at Gilghit it is called bulla. The Dard legends and beast tales have been described by Dr. Leitner.—*Dowson; Latham; Vigne.*

DARDANELLES, two castles of Turkey. One, called Sestos, is in Roumania; the other, Abydos, in Natolia. Long. 26° 26′ E., lat. 40° 10′ N.

DAREGA, a round shield used by the fair red-haired Touareg race in Northern Africa.

DARENGRI. HIND. An astringent leaf used in Kashmir in dyeing.

DARFUR or Darfoor, a kingdom of Africa, on the borders of Nubia and Nigritia. The people are barbarous, and consist of native tribes, of a deep black complexion, with woolly hair.

DARGAH. HIND., PERS. A tomb or shrine, of which there are in India several of fame. Near Mangalore, at the village of Cuddry (two miles off), is Shaikh Furreed ka Dargah. It consists of a hole in the centre of the side of a perpendicular laterite rock, which is fabulously said to lead all the way to Hyderabad, 450 miles. The opening is square, about six feet above the ground, ascended by a flight of stone steps rudely constructed, and just large enough to allow of a person to crawl in. The cavern is very dark, and no one knows the exact size of it. Adjoining is a chasm with an opening left for people to creep in by. Tradition states that about A.D. 1738, there was a pir named Shaikh Furreed, who made chilla (*i.e.* neither speaking, eating, or drinking for forty days, but worshipping God and living retired from the world). He resided at Cuddry for twelve years, during which time he used to observe chillas, remaining for forty days together in the cavern, seeing and speaking to nobody, eating and drinking nothing; after the forty days were over, he was wont to come out for four or five days, but partake of no other food but the leaves of a plant (since named after him), Furreed-bootee, which grows wild in the surrounding jungles, and has a sweetish taste; he drank water, spoke during these days, said prayers in an adjoining stone building, and then retired again to this cavern to perform another forty days' chilla, and so on. At the end of twelve years he disappeared, and this being the road to Mecca, it is said that he set out for that town by the subterraneous route, and has never been heard of since. Mahomedans resort hither occasionally, and on Fridays cook victuals, and, having offered fatiha over them while burning incense, in his name distribute them among the fakirs resident there, as well as those who have accompanied them. If a dargah be situated in a place where no food can be dressed (from want of materials or otherwise), they take sweetmeats with them, which they substitute in its stead. This dargah is in the charge of a fakir, who receives the offerings that are made by visitors, and which are placed at the entrance of the cave; when he dies, the four principal makkan-walay (pirs), residing at the four principal makkans (or houses of pirs), spiritual guides (so called) at Mangalore, and six or ten of their murid (or disciples), select a successor; on such occasions numerous fakirs are likewise present. In Tipu Sultan's time, the individual in charge of this dargah received rupees

corresponding to the number of masts of the vessels that entered the roads,—for every ship, three rupees; patamars, etc., two rupees; manji, etc., one rupee. This was abolished when the place fell into the hands of the British.

A famed dargah is on the banks of the river at Mangalore, and consists of a large, long tomb, with minarets at each extremity. Lao Langar Shah, a fakir, whose name it bears, is buried here. Lamps are lit here every night; and it is chiefly visited by the Tamil, a Hindu race, but also other Hindus and Mahomedans. Most Hindus, however, frequent Shaikh Furreed's dargah. Dargahs are resorted to when people are desirous of being freed from any distemper, misfortune, etc. If the individual who is enshrined in the dargah has been wealthy, large dinners are provided, fatiha offered, and the food distributed to any who choose to partake of it; there being sometimes kanchni ka taifa (band of dancing girls) to entertain the guests. Among the great, this takes place on every night of the year (and is never observed in the day-time); but among the poorer classes of people, every Monday and Thursday, or once a week or month.—*Herklots.*

DARHA, the tutelary deity of the Kol and Oraon.

DAR-HALD. Hind. Berberis lycium, B. Asiatica, B. aristata. The word means yellow wood, and is also applied to turmeric.

DARI, an ancient dialect of the Persians, supposed to have been spoken about Balkh.

DARI, Daree, or Durree. Hind. The cotton-striped or patterned carpeting of India; also a stout twill cloth, woven like a dari (carpet), only finer.

DARIA. Pers. A sea, a lake. Daria-Dara, a lake of Afghanistan, in lat. 33° 35′ N., and long. 64° 53′ E., 40 miles S. of Siah-Koh.

Daria-i-Neyriz, a lake in the province of Fars, about 10 miles E. of Shiraz. It is 60 miles long, and 3 to 5 miles broad, and is filled by the river Kur. Its surface is often covered by innumerable water birds.

Daria-i-Raza, the Aryan Palus of the ancients, a lake formed by the accumulation of the waters of the Helmand at the southern extremity of its course, and called the lake of Zarrah by Europeans. This is a contraction of Zarrenj, the ancient capital; and this again represents the Zarangi or Drangi of the Greeks. In old Persian books it is called Daria-Raza, or Little Sea. The present inhabitants of Seistan call it Meshila-i-Rustum, also Meshila-i-Seistan. Meshila merely means in Arabic, a muddy swamp. The ordinary name of the lake is Hamun, or the expanse.—*Ed. Ferrier's Journ.; MacGregor.* See Helmand.

DARIDR. Hind. Poverty. Daridr khedna, to drive out poverty, is a custom, on the morning of the Dewali, of taking a sieve or winnowing basket and beating it in every corner of the house, etc., for the purpose of averting poverty. The night preceding the ceremony is passed as a vigil, called Koja gara, as Lakshmi descended on this night, and promised wealth to all who were awake. At night, parties of merchants play cards at high stakes.—*H. Elliot.*

DARI-KHANA, a hall of audience, appropriated for ceremonies; carpets are spread.

DARIUS, Persian kings of the Kyanian dynasty, known as Dara. The first seems to have been Darius Hystaspes, whose name has been said to be derived from Hysna, to neigh, and Aspa, a horse. His Persian name was Gushtasp. His admiral, Scylax, reported so favourably of the wealth of India, that Darius invaded India, and annexed the provinces bordering on the Indus. His Indian possessions were the most valuable of his twenty satrapies, and are supposed to have included the Panjab; but there is no testimony to this beyond the authority of Herodotus (lib. iii. p. 100), and the doubtful voyage of Scylax down the Indus. Bunsen gives the following dates of the reigns of the kings Darius:—Darius, son of Hystaspes, B.C. 521 to 486; Darius Nothus, B.C. 423 to 405; Darius III., surnamed Codomanus, B.C. 335 to 332. The edicts of Darius Hystaspes are preserved in the Achæmenian inscriptions at Behistun, first translated by Sir Henry Rawlinson. Bactria is enumerated as one of his provinces in the inscription which he caused to be carved on the rock of Behistun.—*Hist. of Panjab*, p. 45.

DARIYAI. Hind. A plain silk fabric. Dariyai-baf, the silk-weaver. Dariyai dhup-chan (lit. sun ray), shot silk.

DARJILING, in lat. 27° 2′ 48″ N., and long. 88° 18′ 36″ E., in Sikkim, is a large station and sanatorium, 412 miles from Calcutta. The top of the Observatory hill is 7168 feet above the sea. Darjiling ridge, however, varies in height from 6500 to 7500 feet above the level of the sea. The mean rainfall is 130 inches, and mean temperature, 50°. To the N.W. towards Nepal, the snowy peaks of Kubra and Junnoo (respectively 24,005 feet and 25,312 feet) rise over the shoulder of Singalelah; whilst eastward the snowy mountains appear to form an unbroken range, trending north-east to the great mass of Donkia (23,176 feet), and thence south-east by the fingered peaks of Tunkola and the silver cone of Chola (17,320 feet), gradually sinking into the Bhutan mountains at Gipmoochi, 14,509 feet above sea-level. Darjiling was acquired by the British in 1835 as a sanatorium, a tract of country 138 square miles in extent being ceded by the raja of Sikkim, in return for an allowance of £300 per annum, afterwards raised to £600. Its population has increased from a few scattered tribes to upwards of 100,000, chiefly Murmi and Nepalese (32,338), Rajbansi Koch (23,124), the original Lepcha (3952), Dhimal and Mech (1766), along with Sharpa Bhutia, Limbu, Sanwar, and Chopang, and Brahmans, Rajputs, and Oraon. The Bhutia, Lepcha, and Murmi are Buddhists, and speak the Tibetan language. They are strong and active, and incline strongly to the Mongolian race. The Limbu, Sanwar, and Chepang are of a small Mongolian type, strongest in the Limbu, and their language is referable to either the Tibetan or Indian standard. The Mechi, Dhimal, and Garo are lowland tribes, with a Mongolian physiognomy, but are neither Hindus, Buddhists, nor Mahomedans. The Tharoo and Dhanwar are Buddhists or Mahomedans, with fair and barely Mongolian features. The Bahir, Kebaut, Amatti, Maralia, Dhanook, and Dom are not Mongolian, but a dark race speaking Hindi or Bengali. The Koch or Rajbansi inhabit the Terai of Nepal and Sikkim, and have spread into British territory.

The mountainous country, at from 1500 to 4000 feet above the sea, is inhabited by the *Limbu*, a martial, beardless Mongolian race. From 4000 to

6000 feet, the hills are occupied by the *Lepcha*, the *Bhutia*, and *Murmi*. During the summer months, the summit of the great Singaloda spur separating Darjiling from Nepal is occupied by the *Garong*, a pastoral race from Nepal, who graze their flocks at heights from 9000 to 14,500 feet, their great flocks being guarded by huge savage black dogs. The *Lepcha* Buddhists are aborigines; they are a fair, beardless, Mongolian race, omnivorous, amiable, and cheerful. They have a written language in a character of their own.

The *Limbu* are Hindu, Buddhist, and polytheist by turns, as circumstances or convenience require.

The *Bhutia* are from Bhutan, east of the Tista river. Many of them have beards and moustaches. They have a written language in the Tibetan character. They are Buddhist Mongolians. They are agricultural and pastoral.

The mountain slopes are so steep, that the spurs or little shelves are the only sites for habitation between the very rare flats on the river banks and the mountain ridges, above 6000 feet, beyond which elevation cultivation is rarely if ever carried by the natives of Sikkim. The varieties of grain are different, but as many as eight or ten kinds are grown without irrigation by the Lepcha, and the produce is described as very good, 80-fold. Much of this success is due to the great dampness of the climate; were it not for this, the culture of the grain would probably be abandoned by the Lepcha, who never remain for more than three seasons in one spot. The geological structure of the mountains of Sikkim is very uniform, the rocks being principally varieties of micaceous shale and gneiss. The soil is generally formed by the disintegration of these rocks, and is covered in some places with vegetable mould. At Darjiling the Minchu spring water is a carbonated and sulphuretted chalybeate, containing its iron in the peculiar state in which it is found in the Bath waters.—*B. H. Hodgson, Esq., C.S.; Indi. Anna. Medi. Science*, p. 264; *Hooker, Him. Journ.; Dr. Thomson in Eth. Soc. Journ.*

DARMA, a pass leading into Garhwal. Its occupants are said to be the descendants of a body of Mongols, whom Timur left behind him in Kamaon. They practise divination, taking their omens from the warm liver of a sacrificed sheep. They eat the yak and the cow. They inter their dead for a time, and then, in the month Kartik, they exhume and burn them.—*Cunningham's Ladakh; Latham's Ethnology.*

DARMA. Beng. Amphidonax karka, *Lind.* The dárma grass matting is much used in Bengal to make walls of native huts and fences.

DARNING, or Rafu-gari, is a branch of the sewing art, which, though in Europe applied to the most homely purposes, requires the greatest skill in the East, where a defect in a costly shawl is to be made good, or a coarse thread is to be picked out of a piece of a muslin into which it has been accidentally introduced. So skilful are some of the rafu-gar, that they can extract a thread twenty yards long from a piece of the finest muslin, and replace it with one of the finest quality. They are principally employed in repairing the muslins and calicoes that are injured during bleaching; in removing knots, and joining broken threads; also in forming the gold and silver headings on cloths. — *Taylor; Royle, Arts of India.*

DAROGHA. Hind. A superintendent.

DAROO or Daru. Hind. A general term for ardent spirits, and equivalent to the Araq of the Arab and Persian. Daroo distilled from the mahwa flower is produced in great quantities in all the jungles of the Upper Godavery, and in several parts of the Bombay Presidency; but in the S.E. of Asia, rice, gur, or unclarified sugar, the fermented palm wines, are the substances commonly utilized. Daroo also means gunpowder; likewise also medicines.

DAROOD, properly Darud. Pers. Blessing or benediction. Darudi, a person who reads prayers or the Koran at tombs.

DARORAH. Hind. Gang robbery with violence.

DARRAH. Hind. A valley, a glen, a defile.

DARRANG, a district in Upper Assam, in a narrow strip of land, 126 miles long, between the lower ranges of the Himalaya and the Brahmaputra, which is navigable for steamers all the year round. The Aham are a wild tribe of Shan origin from the Burmese hills, who first entered the valley about the 13th century. They organized their conquered territory with minute precision, and held their own until the advent of the British. In Darrang they number only 3490. The Towang Bhutia are entirely independent of the state of Bhutan. They trade with Tibet, and are quiet and friendly. The Aka or Hrusso are a small tribe who used formerly to commit frequent raids on British territory. They now receive pasa or black-mail to the amount of £67 a year. Farther east are the Daphla, whose native mountains extend along the neighbouring district of Lakhimpur. In the year 1872, the village of Amtola, occupied by Daphla settlers, was attacked by a strong party of hill Daphla, and 44 persons were carried off to the mountains.

In Darrang, as in the rest of the upper valley of the Brahmaputra, the great majority of the population are of aboriginal descent. The aborigines of the census report are mainly composed of Lachari, who number 62,214 out of the total of 76,094; Rabha, 10,302; Daphla within the district boundaries are 134 in number; Koch, 46,788; Dom, 8023; and the Aham, 3490. Of Hindus proper, by far the most numerous caste is the Kolita (16,998), the ancient priesthood of Assam, who are now admitted to Hinduism as pure Sudras. The weaving castes are also strongly represented, with an aggregate of 18,550 members.—*Imp. Gaz.*

DARSANA. Sansk. Demonstration; a system of doctrine or philosophy, of which six schools are recognised by the Hindus:—

1. The *Sankhya* philosophy of Kapila was dualistic, teaching the distinction of soul and matter.

2. The *Yoga* or Patanjala system taught the practice of abstraction, or Yoga.

Logic or dialectics has two parts, viz.:

3. The *Nyaya*, as taught by Gautama or Akshapada; and

4. *Vaiseshika*, founded by Kanada or Kanabhaksha.

5. The *Purva Mimansa* philosophy, by Jaimini, treating of the purport of the ceremonies of the Vedas. It is commonly called the Mimansa.

6. The *Uttara Mimansa* or Vedanta, by Veda

Vyasa or Badarayana, inculcating the unity of spirit and matter.

The principal doctrines of the Uttara Mimansa are that God is the omniscient and omnipotent cause of the existence, continuance, and dissolution of the universe. It is supposed to have been founded three or four centuries before Christ. The Nyaya and Vaiseshika recognise a supreme being. The Yoga is theistical, and Sankhya atheistical. All have the same final object, the emancipation of the soul from future birth and existence, and its absorption into the supreme soul of the universe.

The Sankhya system was taught by Kapila. Its principal doctrine is that rest from transmigration is to be obtained by true knowledge, and that true knowledge consists in regarding man and the world as altogether worthless and perishable. Kapila added little or nothing about the eternal reality behind these transitory things, and this important portion of the scheme was completed by Patanjali, forming the second or Yoga system of philosophy. Patanjali's four chapters are appended in the best manuscripts to the Sutras (or leaves) of Kapila, and form together the work called Saukhyapravāchana.

The third philosophic system is the Nyaya of Gautama, which again was supplemented by the Vaiseshika, or fourth system of Kanada. These two darsanas both occupy themselves with elaborate investigations into the mental constitution of man and the laws of logic, as means for the attainment of true knowledge. Lastly, the fifth and sixth systems are called the Purva Mimansa and the Uttara Mimansa. The first originated by Jaimini, and the second by the eminent sage Vyasa. It is this last system, the Uttara Mimansa of Vyasa, to which the title of Vedanta is applied; the word meaning, 'the ultimate aim of the Vedas.' All the other systems of philosophy recognise the Vedas as sacred; but the two Mimansas treat them as absolute revelation, and are in fact commentaries and interpretations of their earlier and later portions.

The Vedanta simply teaches that the universe emanates in successive developments from Brahma or Paramatma, the supreme soul; that man's soul is identical in origin with the supreme soul; and that liberation from transmigration will be obtained so soon as man knows his soul to be one with the supreme soul. The Vedanta system represents the religion of Hindu philosophy, or rather the religion of philosophers. To suppose that men who accepted the Sankhya or Nyaya systems would therefore take no interest in the Vedanta, would be somewhat like supposing that if a man studied Aristotle he would necessarily despise the Psalms. The great Hindu theologian, Sankaracharya, author of the poem Atma-Bodha, was an enthusiastic Vedantist.

Darsana with lay Hindus generally means performance of religious duties, visiting temples, seeing or reverencing idols.

DARUDI, from Darud, PERS., benediction, one who repeats benedictions at a tomb or public building.

DARUKA, in Hindu mythology, a female Asura, who, according to Colonel Vans Kennedy, was the leader of a host of Amazonian Asura, with whom the gods were afraid to engage in battle, from the dread of incurring the sin of feminicide. They in consequence applied to Siva, on whose solicitation Parvati produced from herself the form of Kali, having in her hands a trident and a skull. On beholding her, the affrighted gods ran away. Kali alone attacked Daruka and her hosts, and destroyed them.—*Cole. Myth. Hind.* p. 378.

DARUN-AJ-AKARBI. ARAB. Doronicum scorpoides, a kind of fern, the root and leaves of which reached Ajmir from Arabia *via* Bombay. Considered as a tonic. Four to six massa are a dose. One tola costs two rupees. — *Gen. Med. Top.*

DARVESH, from Dar, a door, and Vihtan, to beg, is the Persian term synonymous with the Arabic and Indian fakir, a Mahomedan religious mendicant. Originally there were twelve orders, viz. Rafai, Sadi, Sahravardi, Shibani, Mulavi, Kadiri, Nakshbandi, Vaisi, Jalwati, Khalwati, Beuawi, Dassuki. There have been many branches added, amongst whom may be mentioned the Banawa, Chishti, Kalandar, Madaria, Rasul-Shahi. The system of religious devotees originated amongst Mahomedans,—according to one tradition, with O'vais bin Aamir. He had never seen Mahomed, but he so loved and revered him, that he caused two of his front teeth to be extracted, because Mahomed had lost two of his front teeth in the disastrous battle of Ohod, and the example given by Owais was followed by the khalifs Abubakr and Ali, and the associations of recluses created by them. But most of the existing orders of darvesh which are scattered over Mahomedan countries, trace back their origin to Jalal-ud-Din, Rumi, the author of the Masnavi-i-Sharif, who founded the Mulavi order. In European Turkey, the darvesh have formed somewhat prominent communities, and about sixty different orders, each named after its founder, are supposed to exist there. The Batashi or Bektashi of Constantinople are said to be quite atheistic, not attached to the principles of the Koran, nor firm believers in Mahomed as a prophet. They are generally of the sect of Ali, therefore Sufi or Mahomedan spiritualists. They have a takiah on the bank of the Tigris at Baghdad, on the west side of the town. The Rafai darvesh, so common in Turkey, inflict on themselves great self-torture. They are also known as the Eesawiya, *q.v.* Some of the wandering Indian fakirs travel so far west as Hungary, to visit the shrine of a santon, Gul-baba, and travel east to Tenasserim and Burma. One whom the editor met near Hingolee, in the Dekhan, was a native of the Panjab, but had been to Ceylon, Mergui, Tavoy, Rangoon, and Moulmein. In British India many fakirs are low, profligate men, held in great disesteem by all classes of the community, and some of them are utterly degraded in habits and mode of life. The bulk of them are Be-Sharra, literally without law, *i.e.* do not act up to the precepts of Mahomed, but are latitudinarians; a few are Ba-Sharra, or with law, following Mahomedanism. The latter are styled Salik; the Be-Sharra are the Majzub. Azad, Rasul-Shahi, Imam Shahi, Kalandar, are of both sects.

No character in the Moslem world is so proper for disguise as that of the darvesh. It is assumed by all ranks, ages, and creeds,—by the nobleman who has been disgraced at court, and by the peasant who is too idle to till the ground; by

Dives who is weary of life, and by Lazarus who begs bread from door to door.

The Madaria order are named after Badi-ud-Din, Shah Madar, called also Zandah Shah Madar, who is buried at Makanpur (ob. 1433 A.D.).

The Nakshbandi darvesh illustrate their theology with pictures.

Mevleviych, dancing darvesh, are a solemn and, for the most part, learned body of men, revolve like teetotums till they have addled their brain.

Gulshaniych, the Howlers of the guide-books, toss their heads backwards and forwards, and howl the name of Allah till they fall back foaming at the mouth in an epileptic fit.

The Rafaiyeh cut themselves with knives, eat live coals, chew glass, and perform other mad freaks for the same purpose, namely, to lose the idea of self and attain a fancied reabsorption in the Deity. How far the same motives may have actuated the prophets of Samuel's time, when Saul (as casual spectators at a darvesh celebration often do now) stripped himself naked and joined the wild prophetic dance (1 Samuel xix. 24), must be left to biblical scholars to decide.—*Burton's Mecca*, i. p. 21; *Osborn's Islam*, p. 92; *Herklots, Qanoon-i-Islam*; *H. Elliot*.

DARWAZ, a chieftaincy in the valley of the Oxus. It is north of Badakhshan, and is ruled by an independent Tajak chief. He claims a Grecian descent, like the mir of Badakhshan, and the chiefs of Chitral, Gilgbit, Iskardo, and others. The Oxus sands here are washed for gold.—*MacGregor*, p. 224.

DARWAZAH. HIND. Door; the gate of a town or fortress. All great Mahomedan cities name their gateways generally as leading to other cities, such as Mecca-darwazah, Dehli-darwaza. Darwazah-i-Irak, the western gateway of the town of Herat. See Dar.

DARWAZYE, one of the Hazara states, the chief of which is of the Tournoulee.

DARYAN or Dryon, a strait above 120 miles long, from Pulo-Varela to the Carimons, and is bounded on the west side by the coast of Sumatra, False Durian, Sabon, and the contiguous islands; on the east side by the islands off the south and west sides of Lingin, Great and Little Durian, and the adjacent islands. Throughout these straits the tides are very irregular.—*Horsburgh*.

DAS. HIND. Ten. Dasaha, MAHR., the period of the ten days' impurity on the death of a relative. Dasoond, the tenth part. Dasa-Marma, the ten commandments of Valabhacharya. Dasagriva, or the 'Ten-necked,' a name of Ravana. Dasahara, or 'Ten-removing,' a name of Ganga.

DAS, Dāsa, Doss, forms part of the names of many Hindus of N. India and Bengal, and is of frequent occurrence amongst the Kayasth tribes. Dasa means servant, slave, the servant or slave of a deity, and corresponds to the Abd and Ghulam of the Mahomedans. The Arab Abdallah and the Hindu Iswara Das alike mean the servant of the Lord. Narayan Doss, Bhagavan Das, Krishen Doss, for instance, signify the slave of Narayan, Bhagavan, or Krishna. Ramdas is, in like manner, the slave of Rama. Deva Dasa are Hindu temple women, slaves of the temple deity. In the days of Akbar it was borne by Rajputs, as Raja Bhagwan Das, of the Kachwaha tribe. It is now seldom used by Rajputs except for illegitimate offspring.

DASA, an order of Vaishnava devotees.

DASAHARA or Dashara. SANSK. The tenth of Jeth Shukhl Paksh, which is the birthday of Ganga. Also is the tenth of Asin Shukl Paksh, Asoj or Ashwin shud, on which, after the worship and religious ceremonies performed during nine nights, the Hindus throw the images of Devi into the river. The day is celebrated with great pomp by the Mahrattas and Hindus of Mysore and of all Maharashtra. The festival occurs about the first days of October. It is supposed to relate to the autumnal equinox or the breaking up of the S.W. monsoon, when the weather becomes suitable for military operations. In Bengal it is a popular festival in honour of Durga, celebrated in the month Aswin (September—October), for nine days. The tenth day of Asoj is commemorative of the date on which the deified Rama commenced his expedition to Lanka for the recovery of Sita from Ravana. The nine days preceding the Dashara are the Naoratri, or 'nine-nights,' during which a Brahman is engaged to read the praises of Durga, and on the tenth perform the homa or fire-sacrifice, in which rice and ghi are poured into the fire. Bania women keep up a dance called garbha. As Arjuna and his brothers worshipped the shumee tree, the Acacia suma, and hung up their arms upon it, so the Hindus go forth to worship that tree on the festival of the Dashara. They address the tree under the name of Aparajita, the invincible goddess, sprinkle it with five ambrosial liquids, the panchamrit, a mixture of milk, curds, sugar, clarified butter, and honey, wash it with water, and hang garments upon it. They light lamps and burn incense before the symbol of Aparajita, make chandlos upon the tree, sprinkle it with rose-coloured water, and set offerings of food before it.

In this festival Hindu soldiers have converted the animals and instruments of modern warfare into emblems of their Bellona. Thus the horse is invoked to carry his master, first to victory, and then to repose. The flagstaff is the ensign of Indra; the sword is celebrated under several names; the bow and arrows are also praised; and even fire-arms have their proper pre-eminence of adoration. The Hindu artilleryman at all times regards the gun to which he is attached as an object of superstitious reverence, and usually bestows on it the name of some deity. During the Durga festival, the cannon belonging to the army were planted, praised, invoked, and propitiated by several species of offerings. On the morning of the tenth day, the Peshwa, with all his chiefs and soldiers, used to move out to the camp in the vicinity of the city, each being ranged under his particular banner, mounted on his best horse, dressed in his finest clothes, and with his arms highly polished. Horses, elephants, and camels were all arranged in their gayest trappings, and every corps spread its gaudiest flags and banners. The whole population of the capital, either as actors or spectators, joined in this grand procession, which moved towards the sacred tree, the object of adoration. After the offerings and prayers, the Peshwa plucked some leaves of the tree, on which all the cannon and musketry commenced firing. The Peshwa then plucked from a field, purchased for the occasion, a stalk of jawari or bajri, on which the whole

crowd fired off their arms or shot arrows, and rushed in an instant and tore up the whole. Each endeavoured to procure a share of the spoil. Some succeeded in carrying off a handful, whilst others contented themselves with a few stalks; all, however, returned home with shouts of joy, and the remainder of the day and night was devoted to festivity and mirth. Many other usages prevail at this festival, which are peculiar to the Mahrattas; among others, that of sacrificing sheep and buffaloes, sprinkling the blood on the horses with great ceremony, and distributing the flesh of the former to all ranks, Brahmans excepted. The chiefs often gave money to enable their soldiers to buy sheep to perform sacrifices, which, from furnishing them with a good dinner, were by many considered as the most essential ceremonies of the Dasahara.—*Forbes, Rasamala, Hindu Annals*, ii. p. 335.

DASA-KAMARA-CHARITA, Tales of the Ten Princes, a Sanskrit book by Sri Dandi.—*Dowson.* See Dandi.

DASANAKHI. HIND. An ancient missile weapon of India.

DASARATHA, king of Ayodhya, of the Solar race, a potent sovereign in ancient India, and father of Rama. His kingdom consisted of the eastern countries, Sindhu, Saurastra, Savira; southern countries, Anga, Banga, Magadha, Kosala, and Kasi. He was a descendant of Ikshwaku. Buchanan supposes him to have lived in the 15th century before the Christian era. According to Wilson, the sons of Dasaratha were Rama, Lakshmana, Bharata, and Satrughna. His chief queen, Kausalya, bore Rama; Kaikeyi gave birth to Bharata, and Su-mitra bore Lakshmana and Satrughna. At the time that Sita was married to Rama, Urmila, the other daughter of Janaka, was given to Lakshmana, and the two other brothers were married to Mandavi and Srutakirtti, the daughters of Kusadhwaja, the sovereign of Sankasya, or, according to the Agni Purana, of Kasi or Benares, and brother of Janaka. Dasaratha Jataka is the Buddhist story of king Rama.—*Hindu Theatre*, i. pp. 288-289.

DASARI. TEL., KAR. A mendicant of a class in the south of India, a worshipper of Vishnu.

DASATIR, sacred writings of the ancient Persian prophets, published by Mullah Firoz-bin-Kaus at Bombay in 1818, in 2 vols. 8vo.—*Buist's Cat.*

DASHA-BHOOJA. SANSK. From Dashan, ten, and Bhooja, an arm. Dashahara, SANSK., from Dashan, ten, and Hree, to take away. Dasha-koomara, SANSK., from Dashan, ten, and Koomara, a son. Dasha-dik-pala, SANSK. Pala signifies the cherishing of a person. Dasha-rat'ha, SANSK., from Dashan, ten, and Rat'ha, a chariot. Dashama-padshahé-grant'ha, SANSK., from Dashama, the tenth, padshah, king, and Grant'ha, a book.

DASHI. KASHMIR. The edging at the ends of a long shawl.

DASHMANTA or Dushyanta, a king of the Lunar race, husband of Sakuntala.

DASHT. PERS. A desert; also an open tract of country, a plain.

Dasht-i-Badu, the northern part of Dasht-i-Goran.

Dasht-i-be-Daulat, in Baluchistan, is an elevated valley or plain, situated to the N.E. of Mustuug, at the head of the Bolan Pass. Its area is from 15 to 20 square miles, and some of its boundaries approach the Bolan pass. It has no towns or villages, but is occasionally dotted with the tomans of the Kurd tribe. Some portions of it are cultivated in the spring and summer months, but during the winter it is a bleak, howling wilderness, destitute of trees or any shelter; the snow lies deep on it, and cold winds whistle over its frozen surface. It is subject to the depredations of the Kaka tribe of Afghans, and caravans are frequently plundered by them. In the summer it is frequently clothed with the fragrant terk plant, and its surface diversified by fields of waving grain. It has no streams, but one or two wells have been dug, and water obtained with some difficulty. The cultivators are dependent on rain and heavy dews for the success of their labours. On the N. it communicates with the valley of Shal, on the E. it has the Kharlaki ridge, in which is the head of the Bolan pass, and on the W. and S. Chahaltan. It is pretty in spring, and parts are cultivated.

Dasht-i-Drugi, a small plain in Jalawan.

Dasht-i-Goran, or plain of the wild asses, is S. of Chappar, in the Kalat district, occupied by the Sunari section of the Zahri Brahui of Jalawan. It was once occupied by the Zigger Minghal, but their increasing numbers compelled them to migrate.

Dasht-i-Kapchak. Kapchak is a Turkish word, and Dasht means a wide uncultivated plain.

Dasht-i-Mat, a valley in Jalawan.

Dasht-i-Tik, part of Dasht Goran.

Dasht-Khor, in Kej, is fertilized by the river Khor, which disembogues near Juni, W. of Ras Pishkan. The occupants are Kaodai (Khudai?), Rind, Hot, Birdi, Bar, and Shahzada.—*Robertson; Pottinger; Hough; Mason; Cook; Markham, Embassy*, p. 34; *Ross.*

DASHTISTAN means a level country, from Dasht, a plain; but it is particularly applied to the low country extending along part of the shores of the Persian Gulf.—*Fraser's Khorasan.*

DASHYANTA was eldest son of Aulla, and father of the emperor Bharata by Sakuntala.

DASI. HIND. A female servant.

DAS-NAMAH, a Hindu sect, worshippers of Siva, also called Dandi. Sankaracharya was their founder. They take this name from the words Das, ten, and Namah, a class, because there were ten orders amongst them. See Dandi.

DASOOND, or tenth, in Mewar, as in Europe, was the stated sum to be levied in periods of emergency or danger.

DAS PADSHAH-KI-GRANTH. This and the Adi-Granth form the religious writings of the Sikh sect. See Sikhs.

DASRAT RAMA, a name of Rama Chandra.

DAST. PERS., HIND. The hand. Dastawez, a signature, a voucher. Dast Bosee, lit. hand-kissing. Dastah, a kalliyon, a small hand hookah. Dastana, a glove, also a flat brush for spreading newly-made paper. Dast Panna, a pair of tongs carried by fakirs.

DASTAGIR-WALAY, an appellation given by the Gyr-Mahdi Mahomedans to all other sects.

DASTAR or Pagri, the name given in India to the turband, worn on the head by Mahomedans of Turkey and India, and by Hindus. The word turband is unknown to Mahomedans of India. It is from Sarband, head-dress.

DASTAR-KHAN, a table-cloth, or rather a floor-cloth, being spread on the ground; but it is also used to denote the custom, whenever a guest enters a house, of laying a table, from which, under all circumstances, he must eat something. The man who attends to the duty is called Dastar-khan-ji. In Central Asia leather table-cloths have, in modern times, been replaced by bright-coloured Russian calico, or, amongst the richer classes, by silk with long fringes. — *Vambery, Bokhara*, pp. 201, 382.

DASTUR, a high priest of the Zoroastrians.

DASTUR. HIND. Custom, hence Dasturi, a customary fee, perquisites formerly paid by a dealer to servants when their master makes purchases.

DASTUR-ul-AMAL, a revenue work prepared in the time of Akbar. A body of instructions and tables for the use of revenue officers under the native Government of India.— *Wils.*

DASYA, in the Sanskrit writings, a race or races who, along with the M'hlecha, opposed the advancing Aryan race. It is probable that they were the prior occupants of the new countries, and were all reduced to subjection or slavery, the word being either from Des, a country, or from Dasa, a slave. The Aitareya Brahmana says most of the Dasya are sprung from Visvamitra, and Sanskrit writers applied the term Dasya to all the aborigines from the Naga of North-Eastern Bengal, throughout all India, to the indigenous races of Ceylon. They are usually supposed to have comprised the Bhil, Kol, Santal, Naga, and other races, who, when the Aryans entered India, were occupying the entire country between the Himalaya and Vindhya. They seem to have been worshippers of trees and serpents, and to have been the first to have adopted Buddhism. Fergusson (p. 13) supposes them to have been of Tibetan origin. They were overcome and ruled over by the Aryans. They built square tower-like temples, with a perpendicular base, but a curvilinear outline above.

DASYAULUS. *Thwaites.* Several species of this genus of middle-sized trees occur in Ceylon, viz. D. fulvus, at Hewessee in the Pasdoon Corle; D. microphyllus, in the south, but rare; D. Moonii, at Caltura near Ratnapura; and D. neriifolia, Gang mee, SINGH., common on the banks of rivers and streams in the warmer parts of the island. The last is the Bassia neriifolia of Moon's Cat. It is grown for shade in the cinnamon gardens, and its timber is used for common purposes.—*Thw.*

DATA, a mode of address among fakirs.

DATE PALMS are met with in almost every part of the south of Asia. In the Peninsula of India the wild date, Phœnix sylvestris, shoots up in every dip of ground, and it is common in portions of the Dacca, Mimensing, and Sunderbun districts. When not stunted in its growth by the extraction of its sap, it is a very handsome tree, rising to 30 or 40 feet in height, with a dense crown of leaves spreading in a hemispherical form on its summit. The leaves are from 10 to 15 feet long, and composed of numerous leaflets or pinules about 18 inches long; the fruit is only about one-fourth the size of the Arabian variety. The cultivators of the true date tree, Phœnix dactylifera, in Arabia, fertilize the clusters of blossoms in the female trees, by taking the stamina of the flowers of the male plant and placing them in the centre of each cluster of blossoms. In some parts of Arabia, however, the male trees are planted to windward, and the pollen, wafted by the wind, fertilizes the blossoms in all the trees in the gardens. The culture of the date is of great antiquity. It was emblematic of the Jewish nation. Jericho was the city of palm trees. The date palm was familiar to the Egyptians B.C. 2378. It is first seen in Babylonian monuments B.C. 1500, and first appears on the Assyrian monuments B.C. 858. A recent writer has supposed the date to be the conical figure on the top of the thyrsus of Bacchus. This fruit, according to Pliny, was consecrated to the worship of almost every heathen divinity; and the date palm is the sculptural emblem of all that is dignified, beautiful, and good, and entered largely into the ornamentation of temples. In India, the Phœnix sylvestris is used solely for the palm juice extracted from it. The process of tapping and extracting the juice goes on all the year round, but in Bengal it is continuous from the 1st November to the 15th of February. Some days previously, the lower leaves of the crown are stripped off all round, and a few extra leaves from the side of the tree intended to be tapped. On the part thus denuded a triangular incision is made with a knife, about an inch deep, so as to penetrate through the cortex and divide the sap vessels, one point of the triangle downwards, into which is inserted a piece of grooved bamboo, in order to direct the sap into an earthen pot suspended underneath it by a string. The pots are suspended in the evening, and, when sugar has to be made, are removed very early the following morning, ere the sun has sufficient heat to warm the juice, which would cause it immediately to ferment, and destroy its quality of crystallizing into sugar. The cutting being made in the afternoon in Bengal, next morning the pot is found to contain, from a full-grown tree, 10 seers of juice, the second morning 4 seers, and the third morning 2 seers of juice; the quantity exuding afterwards is so small, that no pot is suspended for the next four days. The boiling apparatus consists of a hole of about 3 feet in diameter, sunk about 2 feet in the ground, over which are supported by mud arches four thin earthen pans of a semi-globular shape, and 4 inches in diameter; the hole itself is the furnace, and has two apertures on opposite sides for feeding in the fuel and for the escape of the smoke. The fire is lit so soon as the juice is collected and poured into the four pans, which are kept constantly supplied with fresh juice as the water evaporates, until the whole produce of the morning is boiled down to the required density. As the contents of each pan become sufficiently boiled, they are ladled out into other earthen pots or jars of various sizes, from 5 to 20 seers of contents, according to the local custom, and in these the boiled extract cools, crystallizes into a hard compound of granulated sugar and molasses, and is brought to market for sale as goor. By subsequent processes the goor is deprived more or less of its molasses and impurities. A Persian poem celebrates the Arabian date palm, Phœnix dactylifera, and its 360 uses.

DATE PLUM, Yuen-ts-au, CHIN. Fruit of Diospyros kaki.

DATES of Phœnix dactylifera.

Wu-lau-tsze, . . .	CHIN.	Datteln, ...	GER.
Fan-tsau, ...	,,	Khurma, Khajur,	HIND.
Dattes, ...	FR.	Dateri, ...	IT.

The best dates are the fruit of the Phœnix dactylifera, dried in the sun. They have a shrivelled appearance, and a pleasant subacid taste. The date trees on the coast of Oman form a continuous grove to Khorfakan, a distance of 150 miles, and the Arabs have a saying that a traveller may proceed the whole distance without ever losing their shade. Dates form the principal export from Oman, large quantities being taken to India. The Mahomedan and Hindu population are very partial to them. The best are brought from Basrah and Bahrein, those from Oman being classed next in excellence. Some are simply dried, and then strung on lines; others, which is the usual plan, are packed in baskets. The Phœnix dactylifera is invaluable to the desert tribes of Northern Africa and the Sahara, whose most important wants it supplies. The fruit is the common food of themselves and their cattle, while their huts and houses are chiefly constructed of date-wood. Makran dates are famed, and are largely exported. Multan, Dehra Ghazi Khan, and Muzaffargarh produce dates in large quantities from the Phœnix sylvestris, but of an inferior kind to those of Arabia; they are, however, preserved, either by being dried, or else by being boiled in oil and water, and then dried; when about to ripen, a piece of matting is put over the cluster to prevent the ravages of birds, etc.—*Wellsted's Travels*, i. 188; *Fraser's Journey*, 74; *Burton's Mecca*; *Powell's Panjab*.

DATIA, chief town of Datia state, Bundelkhand, lying on the road from Agra to Sagal (Saugor), 125 miles south-east of the former, and 148 miles north-east of the latter, lat. 25° 40′ N., long. 78° 30′ E.; estimated population, 40,000, almost exclusively Hindus.

DATISCA CANNABINA. *Linn.* Ik'lbir, Hind. Grows in Kashmir, Kanawar, Nepal, and the Himalaya; its bark and the woody portions of the root are much esteemed in the Panjab for dyeing silk of a yellow colour. It is also an ingredient in producing a pleasing pale 'pista' green. It is exclusively a hill product. It is used as an expectorant in catarrh. The bark also contains a bitter principle like quassia. Root exported to Amritsar as a dyestuff.—*Stewart; Cleghorn; Cal. Cat. Ex.* 1862. See Dyes.

DATTA. Sansk. From Da, to give; abbreviated into Dat or Dut, a gift, a donation, a son given in adoption, a girl betrothed. Datta or Dutt is a subdivision of the writer caste of Bengal, and borne as a name, as Jai Krishn Dutt. The Datta came to Bengal along with the Kulin race.

DATTA JAYANTI, a Hindu festival held in honour of a deity named Datta.

DATU. Malay. A governor under a sultan.

DATUNI, the root of the Croton tiglium; it is a very powerful purge, much used in prescriptions.

DATURA ALBA. *Rumph.*

D. metel, *Roxb.*, *Rheede.*

Jouz-mazil,	Arab.	Safed dhatura,	Hind.
Pa-daing-phoo,	Burm.	Humata, Humatu,	Male.
Nau-yang-hwa,	Chin.	Velle umate,	Tam.
Man-to-lo-hwa,	,,	Tella umati,	Tel.
Sada dhatura,	Hind.		

The Datura genus of plants is common in India, both wild and cultivated; the colours of the flowers are white, yellow, purple, and blue. D. pontica is reputed to have contributed to the poisonous quality of the honey that was eaten by Xenophon's soldiers. Bishop Heber notices Datura alba in his Walk in Bengal:

> 'While to the cooler air confest
> The broad datura bares her breast
> Of fragrant scent and virgin white,
> A pearl around the locks of night.'

Its beautiful long white flowers in Rohtak are used as an offering to the shrines of certain deities. Its value as a curative in asthma is known both to Europeans and natives, who smoke the seed in their hookahs when so afflicted. The white and purple species are alike used by thieves to stupefy victims, but the white is considered the most efficient. The victims are usually discovered in a state of insensibility, and breathing hard and heavily; if removed, care should be taken not to expose them to the heat of the sun, which is fatal. The action of the poison is quicker in the hot weather than in the cold; much, of course, depends on the individual constitution of the victim. But usually in hot weather it begins to act in five minutes, and coma supervenes within the hour; in cold weather it begins to act in a quarter of an hour or twenty minutes. The seeds are given with sweetmeats, and the effects have been known to continue for two days, and still recovery take place; cold effusion and strong stimulant emetics constitute the most effectual treatment. The vision often continues obscured long after the general recovery takes place. This state is best remedied by blisters to the temples or nape of the neck, and by cold effusion. If given while the stomach is empty, a much smaller dose may induce all the preceding symptoms and prove fatal. This is well known to the Indian poisoners, who suit the time of administration according to the purpose they mean to serve.—*Powell; Stewart.*

DATURA FASTUOSA. *Roxb.*

Kala dhatura,	Beng.	Kachu-bong,	Malay.
Purple thorn apple,	Eng.	Nella umata,	Maleal.
Methel seed,	,,	Gaoz-giah,	Pers.
Downy thorn apple,	,,	Anhenta,	Singh.
Dhatura,	Hind.	Karu umate,	Tam.
Rotikubung,	Malay.	Nalla ummetta,	Tel.

This is very common over both of the Peninsulas of India. It is used in asthma. Both the single and double flowered varieties of this species may be often seen near Burman houses, and children not knowing its poisonous character sometimes eat the fruit, with very serious effects. Its large tulip-shaped white flower is sacred to Mahadeva.—*O'Sh.*; *Roxb.*; *Gen. Med. Top.* p. 133; *Cat. Exh.* 1862; *Mason*; *J. L. Stewart.*

DATURA STRAMONIUM. *Linn.*

Fuh-kia-rh, Fung-kia-rh, Chin.; Thorn apple, Eng.

A native of waste places all over Europe. Its narcotic properties have been proved by Lindberger and others to correspond exactly with those of the belladonna and hyoscyamus. The alcholic extract of the seeds is a perfect substitute for belladonna for many of the purposes described under that head.—*O'Sh.* p. 469.

DATYA, in Hindu mythology, were Brahmans slain by the gods, but were resuscitated by Sukra, their guru, and attacked the gods in Swerga, from which the gods fled in various disguises,—Indra as a peacock, Yamuna as a crow, Kuvera a lizard, Agni a pigeon, Nairat a parrot, Varuna a partridge, Vayu a dove, etc. Indra thus lost his heaven; but he afterwards slew Vitra, the

Datya, and committed the crime of Brahmanicide, for which he had again to leave heaven and do penance. This myth seems to be an account of one of the ancient wars between the Aryan Brahmans and a race with whom they came in contact, or a relation of the suppression of the Vedic naturalism.—*Cole. Myth. Hind.* p. 376.

DAUCUS CAROTA. *Linn.* Carrot.

Istaflin-jazr, . . ARAB.	Mor-muj, Bal, Kach, PAN.
Jazar-ul-bostani, . ,,	Zirduk, ... PERS.
Hu-lo-peh, . . . CHIN.	Gaujara, . . . SANSK.
Staphulinos, . . . GR.	Grinjana, . . . ,,
Gajra, Gajur, Jugur, HIND.	Gajjara, . . TAM., TEL.

Cultivated all over India as a vegetable. Fruit carminative and diuretic. The root is officinal on account of its succulent nature, being favourable for making poultices, which are moderately stimulant. Two kinds in general use all over the Dekhan, are the red and yellow. To preserve carrots until the commencement of the rains in the months of March and April, cut off the green tops, and let the roots remain in the ground; this checks their growth, and by this means good carrots can be had until the middle of July. Yellow Cape answer the best for preserving.

DAUDZAI is a division of the Peshawur district, situated between the Khalil and Khalsa division and the Kābul river. The population in 1868 was 37,671, almost all Mahomedans, Syud, Moghul, Daudzai, Gujar, Khoja, Kashmiri, Khatri, and Arora. The Daudzai tribe in the Peshawur valley, with the Khalil and Mohmand, form the Ghoria Khel, which came from the banks of the Tarnak river in Afghanistan, and settled in Peshawur. They have three sections, the Mandaki, Mamur, and Yusuf. They number 10,000 families.—*MacGr. N. W. F. I.* i. p. 397.

DAUGHTER, from Duhitri, SANSK., milking.

DAUL or Dola. HIND. The boundary of a field, or boundary mark, or mound of earth for that purpose; Scotticé, Dool.

DAULA. HIND. White sugar-cane, the best kind.

DAULAT. ARAB. Fortune, empire, any monarchy. Daulat-ul-Aliyah-al-Usmaniyah, the Ottoman Government.

DAULATABAD, a town and fortress in the Hyderabad dominions, in lat. 19° 57′ N., and long. 75° 18′ E., 10 miles N.W. from Aurangabad. The fortress, also known by the name of Deogiri, has from remote antiquity been a stronghold of the rulers of the Dekhan. At the time of the Mahomedan invasion of the Dekhan in 1294, Deogiri had been in the hands of the Jadhao dynasty since the beginning of the 12th century, and was then the capital of Maharashtra. Alaud-Din suddenly galloped into the town, and announced himself as the advanced guard of the imperial army; the city surrendered, but the Jadhao dynasty was not finally extinguished till A.D. 1312. It received the name of Daulatabad from the emperor Muhammad, son of Taghalaq Shah, who tried to make it the capital of the empire in place of Dehli. See Deogiri.

DAULI, in Cuttack, has two separate local edicts, the remaining edicts corresponding with those at Girnar, in Gujerat. They are in the old Lat character, in Old Pali of the 3d or 4th century B.C., probably B.C. 306? Devanampiya, the young prince of Ujjain, is named 'the beloved of the gods.' The king is probably the father of Asoka, who was regent at Ujjain. Both edicts appoint two tupha or colleges for meditation and the propitiation of Heaven. These edicts repeatedly speak of this world and the world hereafter; and the people are expressly commanded to propitiate Heaven, and to confess and believe in God, who is the worthy object of obedience, or more literally, Him, the Eternal, ye shall propitiate by prayer.

DAUP-YAT, in Amherst, a timber employed for rafters. It is a beautiful, yellowish-white, compact wood, but has a tendency to split. The leaves are used as a dye.—*Captain Dance.*

DAUR. HIND. A large earthen vessel used by grain-parchers.

DAUR, amongst the Balute or village officers of the Dekhan, one of the inferior alute.

DAURANI, a tribe, or nation, inhabiting the tract of country, about 400 miles long, through which runs the road between Herat and Kandahar. Its breadth in the N.W. is about 80 miles, and in the S.E. 150 miles. Their country is bounded on the north by the Paropamisan mountains, inhabited by the Aimak and Hazara; on the west and S.W. is Seistan and desert of sand, the desert separating it from Baluchistan; on the south are Shorawak and the hills of Khajah Amran, which separate it from the Tarin and the Kakars, and on the east they join the Ghilzai. The chain of Khajah Amran, though not a mountain of the first rank, is high enough to bear snow for three months, and to be cold all the year. It is chiefly inhabited by shepherds, who belong to the Achakzai clan of the Daurani. They were formerly called the Abdali, till Ahmad Shah, in consequence of a dream of the famous saint at Chumkani, changed it to Daurani, and took himself the title of Shah Dur-i-Dauran. Some accounts describe the mountains of Toba as their most ancient abode. More numerous traditions represent them as having descended into the plains of Khorasan from the mountains of Ghor, which belong to the Paropamisan group, but leave it uncertain whether that tract was their original seat, and by what causes their emigration was occasioned. This tribe is divided into two great branches, Zeeruk and Panjpa; but these divisions are now only of use to distinguish the descent of the different clans. That of Zeeruk is reckoned by far the most honourable. From those branches spring nine clans, of which four belong to Zeeruk, and five to Panjpa:—*Zeeruk*—Popalzai, Alikuzai, Barakzai, Atchakzai. *Panjpa*—Nurzai, Alizai, Ishakzai, Khugiani.

The whole population of the country number about 600,000, of whom the Daurani are about one-half. They are largely pastoral. The better sort have their lands cultivated by hired labourers, Buzgar, or slaves, but often put their hand to necessary work. The poorer Daurani are often Buzur, but seldom labourers, these being chiefly Tajak and Afghan Hamsaya. The pastoral tribes dwell in kishdi or black tents, 20 to 25 feet long, and 10 or 12 broad, price about £4.

DAURI-GOSAVI. MAHR. A Gosain sect who beat the dauru, a small drum.

DAVALLIA, an elegant fern of Moulmein; fructifications in roundish separate spots near the margin. D. parallela and D. pilosa are of Bengal.

DAVARAJPATNAM, a table-land bounding the Neilgherries to the north.

DAVERSOLABETTA, a peak in lat. 11° 27′ N., long. 76° 43′ E., in the Neilgherries, two miles north of Ootacamund; 8380 feet above the sea.

DAVID. Fort St. David, a ruined fort, in lat. 11° 44′ 20″ N., and long. 79° 49′ 30″ E., 1½ miles north of Cuddalore, of which it may be called a subu b. Clive was appointed governor of it in 1756. In 1758 the French dismantled the fort, but sufficiently restored it in 1783 to withstand an attack by General Stuart.—*Imp. Gaz.*

DAVIS, CAPTAIN JOHN, in 1585 made the first of his three voyages to the north-west, and discovered the Strait which bears his name. On the eastern side of this wide sea, improperly termed a strait, he discovered and named what has retained his appellative, Cape Desolation; and on the western shore, Mount Raleigh, Cape Walsingham, Exeter Sound, and some other places still bear the names he gave them. In his second voyage, in 1586, he examined the coast on the west side of the strait between Cumberland Island and lat. 66½° N. In 1587, not discouraged by his want of success, he made a third voyage, and affirmed that he reached lat. 73° N. He examined the coast which he had seen before, gave names to some other places, but made no advance to solve the problem of the north-west passage. The discoveries which he made in his three voyages proved of great commercial importance, since to him more than any preceding or subsequent navigator has the whale fishery been indebted.

He was chief pilot in a Dutch mercantile voyage to the Malay principality of Acheen, the north part of Sumatra, and he wrote the story of this adventure. The two brothers Houtman were chief commanding officers of the Lion and Lioness; but one of them was slain, with a large number of his men, by a sudden and insidious attack from the Malays while feasting on board ship, and the other was taken captive. Both ships were then safely brought back to Holland by Davis, who survived to encounter a similar tragic fate in 1605. He was fifty-five years of age when he thus met with his death, and was on his third voyage to the Straits of Malacca. His second, from February 1601 to September 1603, was in the capacity of pilot-major to the Red Dragon, one of the English East India Company's first squadron of vessels, under Captain Sir James Lancaster. The last voyage, which proved fatal to Davis, was made by him as pilot of the Tiger, a vessel fitted out by Sir Edward Michelborne, who personally commanded, as it appears, without regard to the East India Company's exclusive privileges. Michelborne wrote the report given by Purchas. A gang of Japanese pirates, whose vessel lay alongside the Tiger in a harbour off Patana, not far from Singapore, were imprudently permitted to come aboard for hospitality. Michelborne says that Davis neglected to keep proper guard, or to remove their weapons; however that may have been, they attempted to seize the English ship, and in the fighting Davis and other men were killed.—*Sir John Ross, N. W. Passage.*

DAVIS, SIR JOHN FRANCIS, author of a General Description of the Empire of China and its Inhabitants; Sketches of China.

DAWA. ARAB., HIND., PERS. A claim. Ladawa, no demands. Madda'a, a claimant. Madda-alei, a defendant.

DAWA. HIND. Medicine. Dawa-i-Atishak, gentian root. Dawa-i-Mubarak, Clerodendron siphonanthus. Dawa-i-Pechish, Ophelia elegans.

DAWAN. HIND. Threshing the corn by bullocks, attaching six or eight in a row, and driving them round a central pivot over the corn strowed on the floor.

DAWAR, known in old times as the Bilad-ud-dawar, and by the modern inhabitants as Zamin-i-dawar. A large province, contiguous to Rukhkhaj, Bast, and Ghor, and the opening of the latter to Sejistan. Elphinstone says, on the right bank of the river Helmand lies the rich country of Zamindawar, which has the Paropamisan mountains on the north, and some hills connected with that range are found within its limits. This fine country extends for forty or fifty miles to the west of the Helmand.—*Elph. Caubul*, p. 122; *Reinaud, Mem. sur l'Inde*, p. 173.

DAWAT, invitation, also exorcism, practised by Mahomedans in India to command the presence of genii and demons; for the protection from evil, casting out of devils, to create enmities, friendships, or love between people, to destroy or injure enemies, detect crimes. These are effected by philters, falcetahs or lamp-charms, smoke-charms, amulets.—*Herkl.*

DAWN.

Bhor, ...	HIND.	Sub'h-i-Sadiq, . .	PERS.
Jhajarkha, ...	,,	Sub'h-i-Kazib, . .	,,

The first grey luminosity is known as the Sub'h-i-Kazib, or false dawn, the true dawn being Sub'h-i-Sadiq. Where false dawns are visible, about two hours before dawn of day, the horizon becomes quite light, and is succeeded by impenetrable darkness. It is chiefly visible about August. An African traveller on the skirts of the Sahara, says he has seen it equally bright, though not equally beautiful, with the Sub'h-i-Kazib of Persia. It is, in fact, nothing but the zodiacal light, respecting the nature and cause of which crude conjectures only have hitherto been put forward.

> 'Tis dawn!—at least that earliest dawn
> Whose glimpses are again withdrawn,
> As if the morn had waked, and then
> Shut close her lids of light again.'

The dawn of the Rig Veda is personified as a lovely maiden, under the names,—Arjuni, for whom the Greeks have Argyronis; Brisaya, Briseis; Dahana, Daphne; Ushas, Eos; Sarama, Helen; Saranya, Erinys.

Panis, a wicked monster, is said to have tempted Sarama to be unfaithful to Indra, and among the Greeks Paris tempted Helen.

DAY, MR., a servant of the English East India Company, who founded Madras in 1639.

DAY. Deputy Surgeon-General Francis Day, a Madras medical officer, who wrote on the fishes of India, Malabar, Cochin, and the British Islands. As Inspector-General of Fishes in India, he examined the rivers and seas from Persian Makran in the west, along two thousand miles of coast eastwards to Singapore; and from 1865 to the present time (1883), in reports to Government, which have all been printed, and in numerous articles to scientific journals, he has contributed to his favourite science an amount of information which no man of science working single-handed has, perhaps, ever before accom-

plished. The more prominent results of his great labours are given in the following volumes :—

In 1865, he published his Fishes of Malabar.
,, 1873, Reports on the Sea and the Fresh-water Fish and Fisheries of India and Burma.
,, 1875–1879, Fishes of India.
,, 1876, Fishes of Neilgherry Hills; Some Wynad Fishes.
,, 1867, Some Fishes of Madras and some of India.
In 1868, Fishes of India; 1869, do. of Orissa, Calcutta, and Burma.
,, 1870, Do. of Andaman, Nicobar, W. India, etc.
,, 1880–1883, Fishes of Great Britain and Ireland.

DAY.

Yom, ...	ARAB.	Giorno, ...	IT.
Divous, ...	CAN.	Dia, ...	SP.
Jour, ...	FR.	Nal, ...	TAM.
Tag, ...	GER.	Dinam, ...	TEL.
Roz; Din, .	HIND., PERS.	Ghyun, ...	TURK.

Latin.	Saxon.	Arabic.	Persian.	Hindustani.	Siamese.
Dies Solis.	Sun's day.	Yom-ul-ahd.	Ek-shumba.	Itewar.	Van Athet. =Day of the Sun.
Dies Lunæ.	Moon's day.	Yom-athnein.	Do-shumba.	Pir.	Van Chau. = ,, Moon.
Dies Martis.	Tiw's day.	Yom-thalath.	Si-shumba.	Mungul.	Van Ngankau. = ,, Labour.
Dies Mercurii.	Woden's day.	Yom-ur-arbia.	Char-shumba.	Charshumba.	Van Poeth. = ,, Meeting.
Dies Jovis.	Thor's day.	Yom-ul-khamis	Panj-shumba.	Jumarat.	Van Prahath. = ,, Hand-day.
Dies Veneris.	Friya's day.	Yom-jooma.	Jooma.	Jooma.	Van Sok. = ,, Rest.
Dies Saturni.	Saterne's day.	Yom us saba.	Shumba or Hafta.	Awul hufta.	Van Saun. = ,, Attraction.

English.	Burmese.	Jewish.	Tamil.	Rajput.	Singhalese.
Sunday.	Tanen ga nway.	Yom rishon.	Nayaru (sun).	Surya-war.	Erie-da.
Monday.	Ta nen la.	Yom sani.	Tingal (moon).	Som, or Indu-war.	Sandoo-da.
Tuesday.	Eu ga.	Yom salisa.	Shevvay (Mars).	Mangal-war.	Angeharrowa-da.
Wednesday.	Bud da hoo.	Yom rabihi.	Budhun (Mercury).	Bud-war.	Bada-da.
Thursday.	Kyapaday.	Yom umishi.	Vyazhum (Jupiter).	Vris'hpat-war.	Brahaspatin-da.
Friday.	Thoukkya.	Yom sisi.	Velli.	Sucra-war.	Sikkoora-da.
Saturday.	Tsa nay.	Yom sabat.	Sani (Saturn).	Sani, or Sanichra war.	Sennesoora-da.

From the remotest times, amongst the Chaldæans, Egyptians, Arabians, Hindus, Greeks, and the nations of northern Europe, there has been a hebdomadary division of the month. In general, the days are commenced by the day of the sun, followed by the moon, and the five planets, Mars, Mercury, Jupiter, Venus, and Saturn.

The following origin of the ancient names has been suggested in connection with astronomical science. The planetary arrangement of Ptolemy was thus :—1. Saturn; 2. Jupiter; 3. Mars; 4. the Sun; 5. Venus; 6. Mercury; 7. the Moon. Each of these planets was supposed to preside successively over each hour of the 24 of each day, in the order above given. In this way Saturn would preside over the first hour of the first day, Jupiter over the second hour, Mars over the third, the Sun over the fourth, and so on. Thus the Sun, presiding over the fourth, eleventh, and eighteenth hours of the first day, would preside over the first hour of the second day; and, carrying on the series, the Moon would preside over the first hour of the third day, Mars over the first hour of the fourth day, Mercury over the first hour of the fifth day, Jupiter over the first hour of the sixth day, and Venus over the first hour of the seventh day. Hence the names of the days yet used in the learned professions throughout Europe.

Four of the present English names of the days of the week are derived from the Saxon. Tiw, Woden, Thor, and Friya were deities of the pagan Saxons. Thor was the god of thunder, as well as the ancient Jove, and Friya was a goddess, the wife of Woden.

The Hindus, however, reckon by the light and dark halves of the moon, which they designate kista (or Krishna), paksham, and sakla paksham, though they, too, have a weekly arrangement. In the Rajput names of the day, Sooraj-war, or Adit-war, is Sunday, and the days of the week are from the other planets. Mangala is one of the oldest names of the Hindu Mars, Kumara, to whom the Woden's-day of the North-men, the Mardi of the French, and the Dies Martis of the Romans, are alike sacred. Mangala also means happy, the reverse of the origin of Mongol, said to mean sad. Vris'hut-pati is he who rides on the bull, the steed or vahan of the Rajput god of war; and Sucra is a cyclop, regent of the planet Venus.

The manner of reckoning the days by the ancient Jews, and which subsists amongst that people at the present time, is to commence the day at a certain hour of the evening, and to finish it on the next evening at the same hour. Thus their Sabbath begins on the afternoon of Friday, and is completed on the afternoon of Saturday. The Roman Catholic Church also commences its festivals in the evening; and this custom is retained in Britain in some of the popular observances, such as the eve of St. John and Christmas eve.

The civil day of Great Britain now commences at 12 o'clock midnight, and lasts till the same hour of the following night. The astronomical day begins at noon, and is counted up to 24 hours, terminating at the succeeding noon. This mode of reckoning the day is that used in the Nautical Almanac, and it sometimes leads to mistakes with persons not familiar with this manner of computation; a little consideration will obviate the difficulty. Thus January 10, fifteen hours, in astronomical time, is January 11, 3 in the morning, civil time. In France and most of the states of Europe, as with the British, the hours are counted up to 12 from midnight till noon, and from noon till midnight. In parts of Italy and of Germany, the day is held to commence about sunset, and the hours are counted on till the next sunset. This mode is very inconvenient to travellers, as the noon of the 'Italian hours' at the summer solstice is 16 o'clock, and 19 o'clock at the winter solstice.

The division of the day among Mahomedans is chiefly subservient to the stated time of performing their devotions, and is not generally very accurate. They begin their account at sunset, reckoning twelve hours from thence to sunrise, whether the night be long or short; from sunrise to sunset they also reckon twelve hours, and consequently a night hour is longer in the winter

than an hour of the day, and in summer the hours of the day are longer than those of the night. At the equinoxes alone, all the hours are of equal length, and then they coincide with those adopted by the British, French, and Germans, in commencement and duration, differing of course six hours in enumeration, so that six o'clock of Britain is their twelve, seven is their one, etc. At other periods of the year, also, their six o'clock coincides with British twelve, but every other hour differs more or less from those of Britain. The time of sunrise, and consequently the length of the day, being known, the length of each hour will be easily found by division, and the period of any given hour determined. Thus, if the sun rise at 7 o'clock, the length of the day will be ten hours (of 60 minutes each), and that of each hour 50 minutes. One o'clock, Mahomedan reckoning, will then be at 50 minutes after 7; 2 o'clock, 40 minutes after 8; and 3 o'clock will be half-past 9; and so on of the others. When the sun rises at 5 o'clock, the first three hours of the day will be completed severally at ten minutes after 6, twenty minutes after 7, and half-past 8. In every case 6 o'clock arrives exactly at midday, which in India is called Do pahar, or the second watch. Mahomedans in India also reckon part of a day for the whole; thus, what they mean by three days, is the day on which an event happens and the two following. The Mahomedans reckon the sidereal day in their time, from sunset to sunset, differing thus from the European civil day, midnight to midnight, or solar day, midday to midday.

Though the Gothic and Scandinavian nations have, in the cases of Tuesday, Wednesday, Thursday, and Friday, given the names of Scandinavian deities, Tuisco, Woden, Thor, Friya, to four days of the week, most of the northern nations have preserved the Latin names, as in French—Mardi, Mercredi, Jeudi, Vendredi; Spanish—Martes, Miercoles, Juenes, Viernes; Italian—Martedi, Mercoledi, Giovedi, Venerdi, while for Saturday they have taken the sabbatical word.—*Tod's Rajasthan*, i. pp. 232, 595; *Bowring's Siam*.

DAYA. Sansk. Gift, donation, inheritance.

DAYA BHAGA, a treatise by Jimuta Vahana on the law of inheritance current in Bengal. The Daya-Krama-Sangraha is by Sri Krishna Tarkalankara, and that by Raghunandana Bhatta Charya is called Daya-Tatwa.—*Dowson*.

DAYAK is the name given to all the wild tribes of Sumatra and Celebes, but is particularly applied to those of Borneo, where they are most numerous; some are wild savages, but others have fixed habitations, large barrack-like huts containing many families. They are ignorant of any written character. In their wars they clothe in prepared skins, their arms are the sword and spear and blow-pipe. The Kayan Dayak are idol-worshippers, keep their dead for some days, and inter in a coffin made of the hollow trunk of a tree. See Dyak.

DAYAL BIRD. Copsychus saularis. See Robin.

DAYAMUR, a magnificent peak in the Bara Lacha or Western Himalaya, visible from Rammagur in the Panjab.

DEAD. The remains of the several races in South-Eastern Asia are variously disposed of. One of the most ancient of the races, the Parsee or Guebre, the followers of Zertusht or Zoroaster, expose their dead on a platform in a circular tower. The Buddhist Tibetans allow the dead to be dragged in an unseemly manner to a distance, and then exposed. The dead of the Buddhist Burmese of rank, particularly of the religious Phoungye monk, is laid in honey for a year, and then conveyed with much seeming rejoicing to the burning place, and burned amidst fireworks. The Chinese revere the dead, and make pilgrimages to their ancestors' graves. Their dead are placed in coffins made of great logs of wood, and lodged in chambers above ground in the manner of the ancient Jews. Some of these log coffins are costly, and it is usual for the rich Chinese to keep their coffins ready for their own use. The Saiva Hindu, the Jangam or Lingadari, the Pariah and non-Aryan races, and the five artisan classes of India, all inter their dead with their faces to the north. The Lingadari artisan dead are seated in the grave facing the north, and in some places are carried to the grave seated on a chair. The Vaishnava Hindu who die of ordinary diseases are burned on a funeral pyre; and it was not unusual amongst the burning classes of the Rajputs and Hindus of the Mahratta country and Northern India, for their widows to immolate themselves alongside the bodies of their deceased husbands. Amongst the Balinese, the widow and slaves of the deceased great are burned along with the deceased. But with the Vaishnava Hindu, unmarried persons, or such as have died of smallpox or cholera, are buried. The Mahomedan dead are all buried, and visits are paid to their graves. Dr. Livingstone describes the practice of the Balonda of S. Africa to be, to abandon the spot where a favourite wife has died.—*Livingstone, Travels*. See Burial Ceremonies.

DEADLY NIGHTSHADE, Atropa belladonna, *L.*, a powerful narcotic poison employed in medicine. It is a herbaceous plant of Europe, with solitary lurid flowers, and violet-black berries on short stalks, springing from the bases of the rather large ovate leaves.

DEAD SEA, called now Bahr-ul-Lut, or the Sea of Lot, into which the river Jordan disembogues. It is the largest lake in Palestine, being 40 miles long, with an average breadth of 9 miles. It occupies the valley of Siddim, in which were the cities of Sodom, Gomorrah, Admar, Zeboim, and Zoar, which sank by some convulsion of nature. It is called the Sea of the Plain, Deut. iii. 17, the Salt Sea in Deut. iii. 17, Josh. xv. 5, from the extremely salt and bitter taste of its waters, which hold 2 lbs. of salt in a gallon; and the East Sea in Ezek. xlvii. 18, Joel ii. 20, from its position with respect to the Judaean mountains. Josephus and the Roman writers call it the Lake Asphaltites, from the abundance of bitumen found in it. The more familiar name, the Dead Sea, is in allusion to the ancient tradition, erroneously but generally received, that no animal could exist in its salt and hydrosulphuric waters. Its surface is 1312 feet below that of the Mediterranean, and in places the water is 1320 feet deep. Hot springs abound near the mouth of the river Jordan. It is 4000 feet below Jerusalem; but the general slope of the intervening district is so regular, that from the spires of the city and the Mount of Olives one can look down directly upon its waters.—*Taylor, Saracen*, p. 63; *Maury's Phys. Geog.* p. 186; *Robertson's Tr.* p. 68.

DEAD SEA APPLES. See Hymenoptera.

DEATH'S HEAD MOTH, Acherontia satanas.

DEB. Beng., Uriya. A cognomen appropriate to Brahmans, as Chandradeb.

DEBAL or Dewal. Sind. An ancient city, celebrated as the emporium of the Indus during the middle ages. It has been supposed to have been the city of Brahmana, but site now unknown; supposed by Burnes and Burton to be the modern Tatta, which is styled Debal or Dewal (temple) by the Arabs and Persians. Mr. Elphinstone and M. Reinaud point to Kurachee, and Dr. Burnes and Mr. Crow indicate a site between Kurachee and Tatta. Mr. Thomas also gives Kurachee as the ancient Debal. The temple was probably on the promontory now occupied by Fort Manora, and was occupied by a pirate tribe called Tangamura. —*Elliot's Hist. of India.*

DEBAR, a celebrated artificial lake in Mewar, 20 miles S.E. of Udaipur (Oodeypore) town, Mewar, 10 or 12 miles N.W. from Chaond, where Pratap destroyed the army which Akbar had sent under the command of Farid Khan. Debar was formed by Jye Singh in A.D. 1681, raising a dam across the streams escaping from the Debar pool, and he named it Jye-Samudra, the Sea of Victory. It is 8 or 10 miles long, about a mile broad, and 960 feet above the sea. Its northern shore is dotted with picturesque fishing hamlets, and its surface with small wooded islands, adding greatly to the beauty of perhaps one of the largest artificial sheets of water in the world.

DE BARROS, JOAO, and Diego De Conto, two Portuguese writers, who, in concert, gave a history of the Portuguese in Asia. Jaoa de Barros held at Lisbon the office of Custodian of the Records of India. He was a contemporary of Albuquerque. He published three decades, his fourth being posthumous, but in these he celebrated the achievements of Albuquerque, to whom he stood in the same relation as Orme, the British historian, does to the British conqueror Clive. His companion writer was Diego de Conto, and their book was entitled Da Asia dos Feitos que as Portuguezes fozeram no descubrimento e conquista das terras e mares do Oriente, Lisbon, 1778. De Barros was born in A.D. 1496, and died in 1570. The first decade of his work was published in 1552, the second in 1553, the third in 1563, and the fourth after his death, in 1777-8.—*Tennant; Bikmore.*

DEBAR RUMI, thin crimson silk.

DEBI PATAN, a village in Gonda district, Oudh, with temples. Lat. 27° 32′ 8″ N., long. 82° 26′ 30″ E. Stated to be probably one of the oldest seats of the Saiva form of Hinduism in Northern India. A large religious trading fair, lasting for about ten days, and attended by about 100,000 persons, is held here each year.—*Imp. Gaz.*

DEBKI, Beng., a dance of the Arabs resembling in some respects that of the Albanians, and those who perform in it are scarcely less vehement in their gestures, or less extravagant in their excitement, than those wild mountaineers. They form a circle, holding one another by the hand, and, moving slowly round at first, go through a shuffling step with their feet, twisting their bodies into various attitudes. As the music quickens, their movements are more active; they stamp with their feet, shout their war-cry, and jump as they hurry round the musicians. The motions of the women are not without grace; but, as they wrap themselves in their coarse cloaks before they join in the dance, their forms, which the simple Arab shirt so well displays, are entirely concealed.—*Layard, Nineveh*, p. 119; *Baron de Bode's Travels.*

DE BODE. Baron C. A. de Bode, a traveller in the lands of Southern Persia, Luristan, and Arabistan.

DE BOIGNE. Benoit de Boigne, born 8th March 1751, at Chambery. He was the son of a furrier, and he joined the Irish Brigade in 1768 as an ensign. After a short service, he entered the Russian army, but, quitting that, after several misfortunes, he landed at Madras in 1777. He entered the 6th M.N.I. as an ensign, which he soon after quitted. In 1784? he took service with Madhaji Sindia, and shared in the battles of 1787, 1788. He then left, but again entered Sindia's service.

DEB-RAJA, the temporal ruler of the Bhot, from Deo, the deity.

DEBRA TABOR, a town in Amhara in Abyssinia, formerly a small village. It was afterwards a place of considerable size, and the residence of the emperor Theodore.

DEBREGEASIA EDULIS. *Weddell.* The Janatsi-itsigo or Teon-itsigo of Japan, is a bush with edible berries, and a fibre valuable for textile fabrics. D. dichotoma occurs in Java, and D. hypoleuca, D. velutina, and D. Wallichiana ascend the Himalayas for several thousand feet.—*F. von Mueller.*

DE BRITO. Philip de Brito y Nicote, surnamed Chango, *i.e.* Good Man, a Portuguese adventurer, who, about A.D. 1600, aided Shimili Shah, king of Arakan. He got possession of Syriam, and became virtually sovereign of Pegu, and conquered the neighbouring kingdom of Tounghoo, reducing its king to vassalage. At last, meeting with reverses, he was betrayed to the king of Ava, A.D. 1613, who impaled him on a hill overlooking Syriam fort, dying after two days of great agony. His wife, a Goanese lady, Donna Louise de Salhanha, with other captives, was carried to Ava, and their descendants are still distinguishable.

DEBROOGHUR, the chief station of Lakhimpur in Assam. From Debrooghur as far as Gowhatee in Lower Assam, there are immense tracts of land on both sides of the Berhampooter, suitable for tea cultivation.

DEBURAH. Heb. In the Hebrew Scriptures are several Hebrew words which in the English version have been translated Fly, viz. Oreb, Zebub, Deburrah, Tsira, Sarabim, Bak, Cinnim. The Orov or Orob, Heb., a swarm or assemblage, is translated in Psalm cv. 31, swarms of flies; but Exodus viii. 31, also Psalm lxxviii. 45, is supposed to allude to the mosquito. The Hebrew Zenon of Ecclesiastes x. 1 and Isaiah viii. 18 is not known. Flies are undoubtedly very troublesome at some seasons in tropical Asia, but an infusion of quassia sweetened with sugar, on a plate, destroys them. See Fly.

DECAISNEA, *sp.*, a very remarkable plant, which Dr. Hooker saw in flower in the Lachen valley, and called Loodooma by the Bhutia, and Nomorchi by the Lepcha. It grew on the ridge near Tumloong and the Ryot valley at 7000 feet; it bears a yellow fruit like short cucumbers, full

of a soft, sweet, milky pulp, and large black seeds. It belongs to the new genus, Stauntonia, of which two Himalayan kinds produce similar but less agreeable edible fruits, the Kole-pot of the Lepcha. Messrs. Cambessedes and Decaisne issued a volume on some of the plants of Jacquemont's voyage.—*Hook. Him. Jour.* ii. p. 198.

DECCAN. See Dekhan.

DECIUS. Ephesus, the chief town of Ionia, in Asia Minor, 45 miles south of Smyrna, was famous for its temple of Diana; and amongst the Mahomedans of the East, its story of the seven sleepers is continued, through the Koran. The legend is that when the emperor Decius persecuted the Christians, seven noble youths concealed themselves in a cavern, which was then blocked up with stones. They immediately fell into a deep slumber, which lasted for 187 years. At last the slaves of Adolius removed some of the stones for building materials, on which the seven sleepers were aroused, and despatched Jamblichus, one of their number, to the city, to procure food, on which the altered appearance of Ephesus, the age of the coin he presented to the baker, and his long beard, led to a discovery of the marvellous occurrence. The bishop of Ephesus, the clergy and magistrates, visited the cavern, and, after conversing with the somnambulists, they quietly expired. James, a Syrian bishop of the fifth century, devotes a homily to its praise; and the story of the seven sleepers is found in the Roman, Abyssinian, and Russian calendars. Mahomed introduced the tale in his Koran, as the Companions of the Cave, and says God caused them to turn over occasionally from right to left to preserve their health.—*Milner's Seven Churches*, p. 171; *Sale's Koran*, p. 219.

DECOITS are gangs associated for the purpose of plunder, who assemble by night, fall on an unsuspecting village, and kill those who offer resistance.—*Elph. India*, p. 377. See Daka.

DE CONTO. Diego de Conto, an officer of the Portuguese, who served in India, and died at Goa, 1600. He brought down from 1539, to his own time, the history of the Portuguese in India, commenced by De Barros. The joint history consists of 24 vols. 8vo. See De Barros.

DEDH, a race in Cutch, who are tanners, and who speak a dialect of the Cutchi. The word seems a modification of Dher.

DEEARA or Dewara. HIND. Alluvial soil, or an island formed in the bed of a river.—*Elliot.*

DEEG, a town and fortress in Bhartpur (Bhurtpur) state, Central India, lat. 27° 28′ N., and long. 77° 22′ E., lies in a lonely marshy tract amid numerous jhils or shallow lakes, fed by the stream of the Manas Nai. Here, on the 13th November 1804, a British force under General Fraser defeated the army of Holkar, and the Jat of Deeg having fired upon the conquerors, siege was laid to the town in December, and it was carried by storm on the 23d. It was dismantled after the capture of Bhartpur by Lord Combermere.—*Imp. Gaz.*

DEER.

Daim, ...	FR.	Cervi, ...	IT.
Hirsch, ...	GER.	Ciervo, ...	SP.
Ail, ...	HEB.	Man, ...	TAM.
Hirn, ...	HIND.	Karaja, ...	TURK.

A general term used by the British in India to designate several bovine animals, distinguishing them as the barking-deer, hog-deer, rib-faced-deer, sambur, and spotted deer. There are, however, frequent minglings of names, as there are a variety of scientific and vernacular synonyms. These animals are all eagerly pursued as game.

Giana of Tibet, Nepal, and sal forests, is the Cervus Wallichii of Cuvier.

Bara Singha or Burava of Bengal, eastern and northern skirts of India, is the Rucervus duvaucelli of Cuvier.

Sangnai or Sangrai of Munipore and Malay Peninsula, is the Panolia acuticornis and P. Eldii of Gray; the Cervus or Rusa frontalis of M'Clelland, and the Cervus Eldii of the Cal. Jour. Nat. Hist.

Sambur of the Mahrattas, Sambara, SANSK., an inhabitant of the Dekhan, Southern Mahratta country, of Sumatra, Borneo, and Banka, is the Rusa equina of Cuvier and Gray, the Cervus equinus of Cuvier, the Cervus or Rusa hippelaphus of Elliot, Rusa etam or Rusa kumbang of the inhabitants of Sumatra.

Sambur of Hodgson, a dweller in the forests of Northern India, is the Rusa hippelaphus of Cuvier and Gray, the Cervus hippelaphus of Gray.

Jarai or Jerrow of the great forests of India and of Ceylon, is the Rusa Aristotelis of Cuvier and Gray, the Cervus Aristotelis of Cuvier.

The Spotted deer, Chitra, SANSK., and Chital, HIND., of continental India and Southern Mahratta country and of the Malayan Peninsula, is the Axis maculata of Gray, the Cervus axis of Erxleben and Elliot.

The Hog deer of continental India and Assam, which is called by the vernacular names Para, Khar, Laghuna, and Sugoria, is the Hyelaphus porcinus of Sundeval, the Cervus porcinus of Zimmerman, and the Axis (Cervus) niger of Dr. Buchanan.

The Muntjak of the Sundanese, Kidang of the Javanese, the Kijang of the Malays of Sumatra, found in Banka, Borneo, Java, and Sumatra, is the Cervulus vaginalis of Bodd. and Gray, Cervus muntjac. of Zimmerman.

The Barking deer of Europeans, the Rib-faced deer of Pennant, dwells in the plains of India. It is the Baiker or Bekra of the Mahrattas according to Sykes and Elliot, the Ratwa and Kaher of the Indian continent of Hodgson, Cervus muntjac. of Sykes, Stylocerus ratwa of Hodgson.

Paddy-field deer of Ceylon is Axis oryzus of Kelaart.

Ravine deer or Bennet's deer, better known to Indian sportsmen as the Chinckara (Antilope Bennettii), is somewhat common on the Salt Range and most parts of the Panjab, but does not affect the Himalayas.

Deer-skins are exported from New York, New Orleans, Canada, and India. Antelope skins from the Cape of Good Hope are of good quality. Deer-skins are all shamoyed, or dressed in oil, chiefly for riding-breeches, and shamoyed leather of sheep, goat, and deer skins was formerly a lucrative branch of the leather trade of Great Britain. This kind of leather is employed for breeches, white or dyed, worn by persons who ride much on horseback. In wet weather leathern garments fit close to the skin, and are long in drying, so that the wearers are liable to colds, rheumatism, and other complaints. —*Jerdon; Adams.* See Antelope; Bovidæ; Cervidæ.

DEESA, a town and military station in Gujerat, on the bank of the Banās, lat. 24° 14′ 30″ N., about 350 feet above the sea; its rainfall is 12 and 14 inches, and the thermometer ranges from 50° to 110°. It is surrounded by a desert of sand. It is one of the hottest and most unhealthy stations in India, the thermometer (Fahrenheit) frequently ranging, during the months of March, April, May, and June, as high as 110 degrees. Deesa town is surrounded by a curtain with bastions.

DEG. HIND. Steel filings, used in firework-

making. A large copper caldron or globular vessel, a cooking pot. Deg-cha, a small pot.

DEGEI, pronounced Ndengei. The supreme god in Fiji, and known in the other groups as Tanga-roa or Taa-roa, Tanga being his proper name, Roa an adjective signifying the far-renowned, perhaps also the most high. To him is attributed the creation and government of the world; and there are no images of him, nor of any of the minor gods, collectively termed Kalou. His sway was everywhere acknowledged by the natives, and no attempts were ever made to elevate any local gods above him. Bure-Kalon is the temple.—*Galton's Vacation Tourists*, p. 269.

DEGHA CHUR. Beng. Islands formed by deposit of the alluvial soil brought down by the Ganges, Brahmaputra, and Megna rivers. So soon as they emerge from the water and cease to be overflowed by the tide, contracts are made for the land at a nominal rent. When bushes and grass appear, wild men, speaking a barbarous patois, come down to pasture large herds of cattle on the young herbage, putting up sheds for the beasts, but themselves bivouacking in the open. They pay grazing rent to the contractor of the island, and rent for cutting fuel. As the land becomes settled, contractors are ready to cultivate, and at length settle on it. They dig large tanks for fresh water, and raise high mounds for the foundations of their homesteads in the low country, which is intersected by numerous water-courses, and plant them round with betel, cocoanut, and date palms, plantains, and other plants.—*Geog. Mag.* June 1877.

DEH. Pers. A village; hence Dehgan, a villager, a cultivator. Dehi, pertaining to a village. Dehat, villages. Dehkani, a villager or cultivator.—*Wils.*

DE HAVILLAND. Colonel Thomas Fiott de Havilland, eldest son of Sir Peter de Havilland of Guernsey, born 1776. He received a cadetship for the Madras Infantry at the age of sixteen, but on the formation of the corps of Engineers he obtained a lieutenant's commission. He was present at the taking of Seringapatam as field engineer, was taken prisoner by the French at sea, but was soon released, and remained with his corps till 1812; then returned to Guernsey, and built Jerbourg barracks. Having returned to Madras, he planned and constructed the Mount road, built St. George's Church, now the Cathedral; also St. Andrew's Church, or the Scotch Kirk, which was long considered the perfection of architecture in Madras, and of which the steeple is still the tallest piece of masonry and its dome the finest in that city. He constructed the North Beach road as a bulwark against the encroachments of the sea, which then threatened to submerge the whole of Black Town.

DEHGAN or Deggan, a supposed Aryan tribe, once spread over Afghanistan, but latterly in the Kunair valley. Elphinstone says they are distinct from the Hindki, and must not be confounded with the Tajak, whom the Afghans sometimes call Dehgan, by corruption from Dehkan, a husbandman. The Deggans speak the language which is mentioned under the name of Lughmaunee in the Commentaries of Baber, the Ain-i-Akbari, and other books. The language seems to be composed of Sanskrit and modern Persian, with some words of Pushtu, and a very large mixture of some unknown root. The greater part of the words, however, are Sanskrit.

DEHLI, a city of Hindustan, built on the right bank of the Jumna, in lat. 28° 39′ N., and long. 77° 18′ E., and 800 feet above the sea. It gives its name to a revenue district under the Lieutenant-Governor of the Panjab. The whole country, for some 10 or 12 miles around the modern Dehli, is covered with the debris of ruined cities, which extend over an estimated area of 45 sq. miles. About fifteen centuries before the Christian era, the town of Indraprestha was in existence on the Jumna, in the vicinity of the site occupied by the modern Dehli. It was one of the five 'pat' or 'prastha,' viz. Panipat, Sonpat, Indrapat, Tilpat, and Baghpat, which Dhritorashtra gave to the Pandu. Now, however, Purana Killa and the Negumbod ghat on the Jumna are the only places which can be pointed to as probably connected with the ancient Indraprestha, and the ghat seems to have been a sacred place of pilgrimage even before the Pandu family settled there. The people still call Purana Killa, Indrapat, though Humayun new-named it Din-Panah, and Sher Shah styled it Sherghar. Thirty princes of the line of Yudishtra succeeded him on the throne, but only their names are known; and the last of them was Kashemaka, who was murdered by his minister Viserwa, whose line of fourteen princes held sway for five hundred years. The last of the Maurya was slain by the raja Kemayoun, styled Sakaditya, or chief of the Saka, who subsequently fell before Vikramaditya, and Avanti or Ujjain became the capital. Dehli was then in existence, because Vikramaditya was described as possessing it,—Dilli-pat-kahayo became king of Dehli. Ancient Dehli was 5 miles distant from Indraprestha, on a rocky hill to the S.W., and 11 miles from the modern Dehli. It is surmised that on the removal of the capital to Ujjain, the cities in that locality lay waste and desolate for eight centuries. Fa Hian, A.D. 400, and after him Hiwen Thsang, who travelled in the 8th century (A.D. 750), make no mention of Dehli, nor is it mentioned in the time of Mahmud, who sacked and plundered both Muttra and Thanésar. In A.D. 1052, however, Anangpal rebuilt it.

In A.D. 1191, Prithi-raj utterly routed Mahomed Gori at Tiruri, 14 miles from Thanésar, and compelled him to recross the Indus. But in 1193 Muhammad re-entered Hindustan with a mixed Turk, Tartar, and Afghan army, defeated the Hindu princes, murdered the king of Dehli, took Ajmir, and returned to Ghazni. From that time until the early years of the 19th century, ending in the mutiny of the Bengal army and the rebellion of the northern people in 1857, Dehli continued in the possession of successive rulers of different races,—Turk, Moghul, Persian, Afghan, —but all following Mahomedanism.

For nearly a hundred years, however, the nominal ruler had been merely titular. The emperor Shah Alam entered Dehli a prisoner with the Mahrattas on 22d December 1771. He continued a mere state prisoner in their hands till 1803, when he was released by Lord Lake. All the territories and resources assigned for his support by the Mahrattas were continued to him, and a pecuniary provision was granted in addition, fixed at Rs. 60,000, but afterwards increased to Rs. 1,00,000 a month. Shah Alam died on

the 19th November 1806, and was succeeded by Akbar Shah, who was succeeded in 1837 by his eldest son, Bahadur Shah. He was restricted to the neighbourhood of Dehli, he was not allowed to confer titles or to issue a currency, but he had the control of civil and criminal justice within the palace. When the mutiny of 1857 broke out, the mutineers in Dehli took possession of the town, fort, and stores, and applied to the king. Bahadur Shah's conduct was vacillating, but he subsequently identified himself with the rebel cause. After the fall of Dehli on the 20th September 1857, he was captured, and tried on the charges of—1st. Aiding and abetting the mutiny of British troops; 2d. Encouraging and assisting divers persons in waging war against the British Government; 3d. Assuming the sovereignty of India; 4th. Causing and being accessory to the murder of Christians. He was convicted on each charge on the 9th December 1858, and sent to Rangoon, where he died in 1862; and thus, after nearly five centuries of sovereign power, the Timurides ceased to reign. The prospect of sovereignty was short-lived. The Dehli massacre of Europeans occurred on the 11th May 1857. Dehli was assaulted on the 14th September 1857. From the 14th to the 17th of September, the Church, the Cutcherry, the College, the Kotwalli, the Magazine, and the Dehli Bank House were one after the other carried and recovered. On the 18th, the line of communication between the Magazine and the Kābul gate was completed. On the 19th, the Burn bastion, near the Lahore gate, was taken possession of by a surprise. This bastion is so called from Colonel Burn, who with a handful of men made a most memorable defence of Dehli in 1804, against an overwhelming army of Holkar, and the cannonade of 130 guns. Sir D. Ouchterlony, then Resident, wrote of this defence, that it cannot but reflect the greatest honour on the discipline, courage, and fortitude of British troops in the eyes of all Hindustan, to observe that with a small force they sustained a siege of nine days, repelled an assault, and defended a city 10 miles in circumference, which had ever before been given up at the first appearance of an enemy at its gates. The 20th of September was the day of the final recapture of Dehli. On that day the imperial palace was entered and found deserted. The main picket of the British forces was at the house of Hindu Rao, on the top of the ridge that is to the north-west of the city. The chief efforts of the rebels were directed against this post of the besiegers. From the 8th of June 1857, until the fall of Dehli, it had to sustain twenty-six attacks. On the 14th of September, the attacking force for the storming of the city was divided into four columns, with a reserve. The party fixed upon to blow open the Kashmir gate consisted of Lieutenants Salkeld and Home, Sergeants Carmichael, Burgess, and Smith, bugler Hawthorne, who accompanied the party to sound the advance when the gate was blown in, and eight native sappers under Havildar Madhu, to carry the bags of powder.

Muhammad of Ghor found Dehli occupied by the Tomara clan, Ajmir by the Chauhans, and Kanauj by the Rahtors. These Rajput states formed the natural breakwaters against invaders from the north-west. But their feuds are said to have left to the king of Dehli and Ajmir, then united under one Chauhan overlord, only 64 of his 108 warrior chiefs; and when, in 1193, the Afghans again swept down on the Panjab, Prithi-raj, of Dehli and Ajmir, was defeated and slain. His heroic princess burned herself on his funeral pile. Muhammad of Ghor having occupied Dehli, pressed on to Ajmir, and in 1194 overthrew the rival Hindu monarch of Kanauj, whose body was identified on the field of battle by his false teeth. The brave Rahtor Rajputs of Kanauj, with other of the Rajput clans in Northern India, quitted their homes in large bodies rather than submit to the stranger. They migrated to the regions bordering on the eastern desert of the Indus, and there founded the military kingdoms which bear their name, Rajputana, to this day. Since then Dehli was burned by Timur, 1398; occupied by Baber, 1526; sacked by Nadir, 1739; taken by Mahrattas, 1758; taken by British, 12th September 1803; and again recovered by British, 20th September 1857.

Dehli town in 1868 had a population of 154,417. Dehli district population, in an area of 1277 square miles, comprised Hindus, 438,886; Mahomedans, 130,645; Sikhs, 580; and others, 38,739, the total population being 608,850. Jats number 107,856, of remarkably industrious habits, agricultural skill, and promptitude in the payment of revenue. North of Dehli the greater part of the land is in their possession, though they often share their villages with Brahman coparceners. Gujars (22,164) are pastoral and semi-nomade, in the hilly plateau of the south. They are addicted to cattle-lifting and thieving. The other tribes comprise 14,109 Ahirs, 10,677 Rajputs, 15,776 Pathans, and 8392 Sayyids.

Akbar and Jahangir usually resided at Agra, Lahore, or Ajmir; and Dehli again languished in disfavour, till the reign of Shah Jahan. This emperor rebuilt the city in its present form, surrounding it with the existing fortifications, and adding the title of Shah-jahanabad, from his own name. He also built the Jamma Masjid, and reopened the Western Jumna Canal. Dehli is still enclosed on three sides by the lofty wall of solid stone, constructed by the emperor Shah Jahan, and subsequently strengthened by the British, at the beginning of the 19th century, with a ditch and glacis. The eastern side, where the city extends to the river bank, has no wall, but the high bank is faced with masonry. There are many architectural remains. In Purana Killa is the Keelar Kona mosque, which was commenced by Humayun, and finished by Sher Shah. It has five horseshoe arches, decorated with blue tiles and marble, and some of them have been noticed under architecture.

The *Palace of Shah Jahan*—now the fort—measures 1600 feet east and west by 3200 north and south, exclusive of the gateways.

Diwan-i-Khas, or Private Audience Hall (the most ornamented of all Shah Jahan's buildings), overhangs the river; nothing can exceed the delicacy of its inlaid work or the poetry of its design.

A little to the south of the Chandni Chauk is the *Jamma Masjid*, standing out boldly from a small rocky rising ground. It was built by Shah Jahan between the fourth and tenth years of his reign, and is one of the finest buildings of its kind in India.

The Kala Masjid, supposed to have been built by one of the early Afghan sovereigns, and the mosque of Roshan-ud-Daula, merit notice.

To the west, beyond the walls, is a little chapel in honour of a Musalman saint, Nizam-ud-Din, near whose shrine members of the late imperial family, up to the time of the mutiny, were buried, each in his own little enclosure, surrounded by very elegant lattice-work of white marble.

Iron Pillar.—The earliest authentic information regarding the city is derived from the iron pillar of Raja Dhava, set up in the 3d or 4th century B.C. (319). It consists of a solid shaft of metal, 16 inches in diameter, and about 50 feet in length, but less than half its height appears above the ground. A Sanskrit inscription, deeply cut on its western face, records the story of its origin. Mr. James Prinsep, the first decipherer of the legend, found that it commemorated the prowess of Raja Dhava, who obtained with his own arm an undivided sovereignty on the earth for a long period; while the letters appear to be 'the typical cuts inflicted on his enemies by his sword, writing his immortal fame.' It is the arm of fame (Kirti Bhuja) of Raja Dhava. There is another inscription on it, which has given rise to a tradition that attributes the erection of the pillar to Anang Pal, founder of the Tuar dynasty in the 8th century A.D. Anang Pal II. made Dehli the Tuar metropolis, surrounding it with a massive line of fortifications, whose ruins are still believed to exist in the great circle of masonry lying around the Kutub Minar. The date of this restoration has been preserved by a second inscription cut into the more ancient pillar of Raja Dhava: 'In Sambat 1109' (1052 A.D.), 'Anang Pal peopled Dilli.' Just a century later, under the reign of a third Anang Pal, last of the Tuar line, Dehli fell before Visaldeva or Bisaldeo, Chauhan ruler of Ajmir. The conqueror permitted the vanquished raja to retain possession as a vassal; and from a marriage between the two houses sprang the celebrated Prithi-raj, the last champion of Hindu independence in Upper India, who thus succeeded to the joint realms of the Tuars and the Chauhans. Prithi-raj further strengthened the defences of the city by an exterior wall, which ran round the fortifications of Anang Pal, and of which remains may still be traced for a considerable distance. In 1191, Shahab-ud-Din made his first invasion of Upper India. As above mentioned, the Rajput ruler Prithi-raj successfully defended his kingdom for the time; but two years later the Mahomedan invader returned, utterly overthrew the Hindus in a great battle, and put their prince to death in cold blood. Kutub-ud-Din, the Sultan's viceroy, attacked and took Dehli, which became thenceforth the Mahomedan capital. On the death of Shahab-ud-Din in 1206, the viceroy became an independent sovereign, and founder of the Slave dynasty, to whom old Dehli owes most of its grandest ruins.

Kutub-ud-Din's Mosque, according to the inscription on its entrance archway, was commenced immediately after the capture of the city in 1193. It was completed in three years, and enlarged during the reign of Altamsh, son-in-law of the founder. Eleven magnificent arches close its western façade, Mahomedan in outline and design, but carried out in detail by Hindu workmen, as the intricate lacework which covers every portion of the arcade sufficiently bears witness. Ibn Batuta, who saw the mosque about 150 years after its erection, describes it as unequalled either for beauty or extent.

The *Kutub Minar*, another celebrated monument of the great Slave king, stands in the S.E. corner of the outer courtyard. It rises to a height of 238 feet 1 inch, tapering gracefully from a diameter of 47 feet at the base to nearly 9 feet at the summit. The shaft consists of five storeys, enclosing a spiral staircase, and is crowned by a now broken cupola, which fell during an earthquake in 1803. The original purpose of the minaret was doubtless as a muazzan's tower, whence the ãsan summons to prayer might be heard throughout the whole city. The site chosen for the mosque was that already occupied by Raja Dhava's pillar, which forms the centre ornament of the inner courtyard. Around, in every direction, spreads a heap of splendid ruins, the most striking of which is the unfinished minaret of Ala-ud-Din, commenced in 1311. The Slave dynasty retained the sovereignty till 1288, when Jalal-ud-Din founded a new line.

Firoz Shah Tughalaq removed the site of Dehli to a new town, Firozabad, which appears to have occupied the ground between the tomb of Humayun and the ridge. Amid the ruins of this prince's palace, just outside the modern south gate, stands one of Asoka's pillars, erected in the 3d century B.C. This monolith, 42 feet in height, known as Firoz Shah's lathi or club, contains a Pali inscription, which was deciphered by Mr. James Prinsep. It is supposed to have been brought from Shrughna, in A.D. 1356, by Firoz Shah on a truck to Khizrabad, and thence by water to Dehli, then called Firozabad, and set up in the courtyard of the palace of Firoz. Its head is now bare; but so late as A.D. 1611, when William Finch was there, it had a golden pinnacle, which gave it the name of Minar-i-Zarin, or golden minaret. It is a single shaft of pale-pink sandstone, and, like all Asoka's pillars, is 42 feet 7 inches high, of which the upper 35 feet are very highly polished.

In 1526, Baber, the sixth in descent from Timur, was the founder of the dynasty which lasted till 1857. He marched into India with a small force, overthrew Ibrahim Lodi, the last Afghan ruler, at Panipat, and entered Dehli in May of the same year. His son for a time was driven from India, but in 1555 Humayun regained his throne. He died within six months of his restoration. His tomb forms one of the most striking architectural monuments in the neighbourhood. Its white marble dome is a conspicuous object for miles around. It cost fifteen lakhs of rupees, and was erected by his widow, Hamida Banu, who is also interred near.

Bhoot Khana.—In Prithi-raj's capital were twenty-seven Hindu temples, of which several hundreds of richly-carved pillars still remain, to attest both the taste and the wealth of the last Hindu rulers of Dehli. The Bhoot Khana is a colonnaded courtyard, the materials of which were obtained from the demolition of the Hindu temples.

The *Alai Durwaza*, built by Ala-ud-Din, A.H. 710, A.D. 1310, is a beautiful specimen of Pathan architecture.

Roushan Charagh, built by Firoz Shah as a shrine to the memory of a famous saint, is at the S.W. corner of Siri or Shahpur.

The fortifications of *Tughlaqabad* form a stupendous structure.

The *Shalimar* gardens were made by the emperor Shah Jahan at a cost of a kror of rupees.

The *Zinat Masjid*, called also the Kumari Masjid, was built by Zinat-un-Nissa, the spinster daughter of Aurangzeb.—*Imp. Gaz.* See Architecture.

DEHRA, a small town in the N.W. Provinces of British India, in lat. 30° 19′ 59″ N., long. 78° 5′ 57″ E., 2300 feet above the sea, with 7316 inhabitants. It is the principal station of the Dehra Doon revenue district, of 1021 sq. miles, with 116,945 inhabitants. The district consists of the double valley of Dehra proper, and the outlying mountain tract of Jaunsār Bāwar. To the S. are the Siwalik Hills, a mass of Himalayan debris. It is cut off from the Doab of the Ganges and Jumna by the Siwalik Hills. It has been largely occupied with tea plantations, and many Europeans reside in the town of Dehra. Dehra seems a corruption of Darrah or Tarai, a valley, or, amongst the Mahrattas, Therri, as Bhima therri, Seena therri. The Ganges, passing between this district and Garhwal, pours rapidly over beds of boulder, through several channels, encircling jungle-clad islets, and debouches at length upon the plains at Hardwar. The Jumna sweeps round the whole south-western boundary, and reaches the level uplands near Badshah Mahal, in Saharanpur district, an ancient hunting seat of the Dehli emperors. The Brahmans (10,279) and Rajputs (33,125) are each divided into the mountain and the lowland clans. The highland Brahmans will eat any kind of meat except beef.

The Mehra race inhabit the remoter portions of the eastern Doon, inferior both in physique and intelligence, and timidly averse to intercourse with strangers. The Dom or Dhūm have dingy black skins and woolly hair; they form the servile class, only just emancipated from actual slavery under British rule.

DEHRA GHAZI KHAN, a town and a district in the Dehrajat division of the Panjab. The town is in a low alluvial tract, 4 miles from the right or west bank of the Indus, in lat. 30° 3′ 47″ N., and long. 70° 49′ 8″ E. It commands important routes and the navigation of the Indus. It leads to the commercial towns of Multan and Bahawulpur, which adjoin it, and is about equidistant from Amritsar and the opulent town of Shikarpur in Sind. The district has an area of 4740 square miles, and in 1868 had 308,840 inhabitants, viz. 38,467 Hindus, 264,527 Mahomedans, and 1124 Sikhs. The plain tribes are the Nootkani, Lund, and Dreshuk, all of them well conducted. Their lands are classed as Pachad, or lands irrigated by hill streams, and Sind, or lands within the influence of the river. The latter class has enormously increased. The soil is a tenacious clay, fertile if well irrigated, but almost entirely sterile if without water. The canals have been greatly extended, partly by the chiefs of the Baluch clans, and partly by the Government. The geographical boundary between the Pathan and Baluch races in the hills nearly corresponds with the northern limit of the district, and it naturally follows that the Baluchis are more numerous in Dehra Ghazi Khan than in any other portion of the Panjab. Each clan owes allegiance to a feudatory chieftain or tumandar.

DEHRA ISMAIL KHAN, a town and a revenue district in the Dehrajat division of the Panjab, the town being built on the right or west bank of the Indus, in lat. 31° 50′ N., and long. 70° 55′ 44″ E. In 1868 the town had 24,906 inhabitants, a third part Hindus. The population of the district in 1868 was 394,861 souls,—338,387 Musalmans, 48,756 Hindus, 1587 Sikhs, and 6134 others. Amongst the Hindus, the Arora numbered 42,087; they comprise the principal trading classes, a few wealthy families being found in the larger towns, the majority being petty dealers in corn or money throughout the country villages. Dehra Ismail Khan is the market town of the Lohani merchants. It is subject to alteration from the inundations of the river, which on one occasion swept away the entire town. It is nearer to the great commercial city of Amritsar than any of the other places on the Indus, and lies on the road between it and Kābul. It is one of the eligible commercial sites on the Indus. It yields iron, coal, and sulphur. —*Bengal As. Trans.* viii. p. 250; *Papers, East India (Cabul and Afghanistan)*; *Imp. Gaz.*

DEHRAJAT, a revenue division of the Panjab, lying between lat. 28° 27′ and 33° 15′ N., and long. 69° 35′ and 72° 2′ E.; area, 15,007 square miles, and population 991,251 in 1868. It comprises the districts of Dehra Ghazi Khan, Dehra Ismail Khan, and Bunnu. It is on the right bank of the Indus, below the Salt Range, and to the point where that river is joined by the waters of the Panjab. It comprises about two-thirds of the narrow strip of land which lies between the Indus and the Suliman mountains, and extends from the hills and valleys of the Kohat district to the Sind frontier. The lower part bears the local name of Sind from bordering on the Indus, and the upper that of Daman, or skirt, from its bordering on the Suliman mountains. The country is flat and in many places fertile, but to the westward of the river there are no wells. A fringe of cultivation and jungle extends along the bank of the great river, and terminates, as you advance into the interior, in a flat desert country, where a precarious supply of water from the hills affords a poor cultivation in the vicinity of the thinly scattered villages. The Tank chief is a Pathan of good family. The nawab of Dehra Ismail Khan belongs to the princely Saddozai race. South of Dehra Ismail Khan lies the large tract of Dehra Ghazi Khan, which extends as far west as the mountains and along the Indus to Sind. Its principal chiefs usually behaved well, even at times when their brethren of the hills were in a state of hostility against British subjects. The plain tribes are the Nutkani, Lund, and Dreshuk, all of them well conducted; they had a certain number of fighting men, but they were long victimized by the Bozdar and Gurchani.

The Dehra Ghazi Khan district has the Dreshuk and Mazari.

Adjoining the frontier of Dehra Ghazi Khan district are the Khutran, Kosa, Laghari, Gurchani, Murri, and Bugti.

Dehra Ismail Khan district, Bunnuchi, Murwati, Butani chiefs of Tank, chiefs of Kolachc, chiefs of Dehra Ismail Khan, Nutkani, Lund.

Adjoining frontier of Dehra Ismail Khan district are Sheorani, Oosterani, Kusrani, Bozdar.

Adjoining frontier of Kohat district, Buzoti, Sipah, Orakzai, Zymoosht Afghans, Turi.

Adjoining frontier of Kohat and Dehra Ismail Khan district, Waziri.

The tribes, from north to south, of the Dehrajat frontier come in the following order :—

Pathan tribes—	*Baluchi*—Kusrani.
Ahmadzai, Waziri.	*Pathan*—Khetrani.
Utmanzai, ,,	*Baluch tribes*—
Mahsud, ,,	Bozdar. \| Laghari.
Butani.	Lund. \| Gurchani.
Sheorani.	Kosa. \| Mazari.
Usteranah.	

—*Papers, East India (Cabul and Afghanistan)*, 1859 ; *Elphinstone's Caubul ; The Derajat, or Hist. of the Panjab ; Aitcheson's Treaties.*

DEHWAL, in Central Oudh, a village official who performs some duties for the cultivators. He also sets up the holi, a stem of the castor-oil plant, and five pieces of cow-dung fuel, on the Basant Panchami.

DEHWAR. Pers. A villager, a farmer. The Tajak race on the northern borders of Afghanistan are called Dehgan. The Dehwar residing with the Babi, at Kalat, are supposed to be descendants of Tajak from Balkh. They are an agricultural, hard-working, poor people, who dwell in villages, and do not migrate. Their language is nearly pure Persian.—*Dr. Cooke in Bo. Med. Trans.* 1860.

DEHWAR, also written Dewar and Deehwar, in Northern India, the village deity, the deity under whose care the village is placed ; the *genius loci*, to whom, at each harvest, a portion of grain is set apart. The corresponding term in the north-west is Thanapati, the lord of the place ; in Bundelkhand, Gram deota or Gramma-deva. In Saugor the deity is styled Miroyea, from the fact of his being the guardian of boundaries. The Dehwar is also very commonly, and even where these local names prevail, styled Bhoomia, from Bhoom, land. The occupation of the Dehwar is very much like that of the Roman Lares rurales,

'qui compita servant,
Et vigilant nostra semper in urbe Lares.'

The Dehwar deities have various local names, such as Kutesuree, Burnaichu, Hunwut, Bhoom Sen, Chanwur, Casheenath, Munsa Ram, Hurdour, Rutnoo, Huree Ram, Jharkhund Eesoor, Kall Sen, Bisharee ; ofttimes they are the spirits of good men, of Brahmans or village heroes, but who, when they become objects of worship, come to be generally considered very malicious devils ; and ofttimes they are nothing but mere epithets of the Dii majores. In some places their images are of male, in others of female, figures. In many places the villagers, for fear of misrepresenting their Gramma deota, erect a stone without form or feature, like the si Deo si Deæ of the Romans, which ambiguous expression was addressed to their tutelary gods, to obviate all chance of mistake. The worship of these village gods is fixed to no stated day. In some places it occurs on the 14th of every month ; in others, on the full moon of Cheyt ; at others, on the full moon of Katik, and so on. The unshapen stone or log of wood is a common form of the village deity of the Peninsula ; but Hanuman is a frequent form between the Nerbadda and the Kistna rivers ; and to the south is the Ai, the Amman or Amma, or some deified hero, or a shapeless stone from the bed of a river. These Dehwar or Gramma deota are ante-Brahmanical ; and with respect to the gods of the south of India there are many circumstances of their worship which are not of Hindu origin.—*Elliot, quoting Bombay Literary Transactions ; Journal R. A. S.*, Nos. ix. and x. ; *Buchanan's East Ind.* ii. pp. 138, 352, 478 ; *Wilson's Hindu Theatre*, i. p. 21, ii. p. 64.

DEIFIED WARRIORS are largely worshipped in the Peninsula of India. Rama, one of these, was the leader of an invasion of the southern part of the Peninsula of India and of Ceylon. He advanced into the forests of Dandakaranya, scattering the prior inhabitants as he advanced, whom he described as Rakshasa and demons, driving some of them into the forests and mountain retreats, where they still reside in a barbarous freedom, and reducing others to the state of predial slavery, in which the Pariah, the Pallar, Cherumar, and other humbled races are now dwelling in the plains. To such invasions is owing the circumstance that each province in India has its own peculiar helot race ; and each range of mountains and each forest tract its own tribes of wild savages, either wholly independent, or partially subject to their more civilised neighbours in the open country. We may instance the Pahari of the Rajmahal hills on the banks of the Ganges, and from their locality westwards through all the races in the Vindhya hills, the Meena, the Mhair, the Bhil, the Koli, southwards through the Gond races in Bustar and Gondwana. Amongst the Santal, the Gond, the Kond, Chenchwar, Souriah, the Yanady, the Irular, the Kurumbar, the Beder, Kallar, to the Maleali or mountaineers in the south, an infinite succession of races and tribes, with customs and speaking languages differing greatly from the inhabitants in the plains, besides whom are numerous homeless races, as the Korava, Wadawar, Yerkalwar, and Pardi. The ancient Sanskrit writers give other names of ancient races with whom the Aryans came in contact in their advance to the Ganges, some of which cannot now be traced.

DEIOPEIA PULCHELLA, an insect common in British India. It feeds on the kernel of the seed of Phyrostigma venenosum, which contains a poisonous principle, and the excrement of its larvæ contains the poisonous principle of the bean unaltered.

DEITY. See Allah ; Bhagwan ; Deo ; Deva ; Eswara ; Khuda.

DEKA-CHANG, in Cachar and amongst the Assamese, is a club-house for the grown-up young unmarried men of the tribes of the eastern frontier, who reside there from adolescence. The Garo and tribes of Central India and Archipelago also follow this custom. It is a town-house or bachelor hall, like the choultry of the south of India.

DEKHAN. India south of the Vindhya range and of the Nerbadda and Satpura, is termed the Peninsula by the British, but northern Hindus and Mahomedans call it the Dakshana or Dekhan, meaning south. At its broadest part, in lat. 22° N., it is 1200 miles across, but it tapers away towards the south, and in lat. 7° 40′ N. ends in Cape Comorin, the Indian Ocean washing its western, and the Bay of Bengal its eastern shores. A range of mountains runs along each side of this peninsula, parallel with the coast, leaving between them and the sea, in their whole length from north to south, a belt of low level land from 20 to 50 miles in breadth. These two ranges are termed the Eastern Ghats, and the Syhadri mountains or Western Ghats, and have elevations of 1200 to 3000 feet respectively ; but solitary mountains and

spurs from the western range attain to 6000 and 8000 feet above the level of the sea. The Western Ghats, on the side next the sea, at places sink precipitously to the level belt below. The Eastern Ghats do not fall so abruptly; but both ranges are covered with thick forests, through which a few passes lead from the coasts into the interior of the country, which is upraised by the mountains into table-lands from 1200 to 3000 feet above the sea, the general declivity of the land being from west to east. The Bombay and Madras armies are distributed over the Dekhan, and branch out into adjoining provinces. Thus the Bombay Presidency has its troops in Gujerat, Cutch, and Sind on the north-west of the Peninsula; and the Madras troops hold British Burma, Mysore, Travancore, and Cochin. Though Dekhan signifies the south, as Poorub does the east, when applied to Bengal and its dependencies, at the present day the term is generally restricted to the Hyderabad and Dowlatabad provinces lying between Berar and the Kistna, and from the Syhadri or Western Ghats eastwards to Telingana. The Hindus and British in Northern India, however, make the Dekhan more extensive, and regard it as including all the southern table-land, supported as it were by a triangle formed by the Satpura or sub-Vindhya on the N., the Syhadri or Western Ghats on the west, and the Eastern Ghats on the east, the Satpura range constituting the base of the triangle. The length from the Satpura range to Salem, and breadth from Mahabaleshwar to Sirguja, are about 700 miles. But if Chutia Nagpur be considered as part of this great table-land, it may be said to extend nearly 250 miles further in a N.E. direction, or about 950 miles in all. Its highest parts are those nearest the Western Ghats, and in the centre of Mysore. Mahabaleshwar, in lat. 18° N., and long. 73° 45′ E., is 4700 feet; the source of Kistna, 4500 feet; source of Godavery, 3000 feet; Poona, 1823 feet; source of Manjera, 3019 feet; and the rivers rising in ravines between spurs of the Western Ghats, wind their way through Eastern Ghats across the Dekhan, the slope being in that direction. The plains of Nagpur, 1000 feet, slope to S.E., drained by Wain-Ganga, which falls into the Godavery. Hyderabad is 1800 feet; Secunderabad, in lat. 17° 26′ N., lat. 78° 33′ E., is 1837 feet. Beder, in lat. 17° 53′ N., long. 77° 36′ E., is 2359 feet. From the Wain-Ganga the surface rises towards N.E., where Rypur, lat 21° 12′ N., long. 81° 40′ E., is 1747 feet; source of Mahanadi, 2111 feet. Nundidrug, highest in Mysore, 4856 feet, slope from hence on all sides, S. to Bangalore, 3000 feet; E. to plains of Carnatic-Chitoor, 1100 feet; N. to plains of Gooty, 1182 feet; and those of Bellary plains, 1600 feet; Gooty plains, 1182 feet; Cuddapah town, 507 feet; and E. part of Cuddapah district, 450 feet.

A great outburst of greenstone or trap rock covers all Berar from the Nerbadda to Bombay, and southwards through Nirmul to Naldrug; between Naldrug and Beder, and for 100 miles north and south of Beder, are great hills of laterite. The area covered by trap in the Peninsula of India can be little less than 200,000 square miles. Except the hollow of the Loonar lake, there is no trace of any crater in this volcanic region: 20 miles to the east of Nirmul, and a few miles south of the mountains, hornblende slate occurs, resting on granite and quartz rock. The countries through which the Gatparba and the Malparba run, and the lower course of the Kistna, Bhima, and Tumbudra, and all about Kalladgi, Kurnool, and Cuddapah, are formed of strata of limestone and clay-slate. The granitic platform of the Dekhan, which intervenes between the Kistna and the Godavery, is intersected by numerous greenstone dykes, sometimes porphyritic, having for the greater part a direction from E. to W. The inhabitants of this great table-land region are nations speaking Gondi, Mahrati, Telugu, and Canarese; and for 120 miles north-west from the town of Sadashipet, running on through Beder and Dangapura, the three last languages join, and the villages are styled Si-bhasha-basti, three-tongue towns. This mingling line is in the Hyderabad Dominions, a State in subsidiary alliance formed from out of the lands of the Gond, Teling, Mauratta, and Canarese races, Persian and Urdu or Hindustani being the court languages.

Away on the N.W. of the Dekhan are the races speaking Konkani and Gujerati, to the N.E. are the Gond and the Uriya races, and the Kandh or Kondh. To the extreme south are races speaking Canarese, Tamil, and Maleala, none of all of whom, however, are reckoned as populations of Dekhan proper. Besides, there are several uncivilised savage or semi-savage races, as the Bhil and the Koli of the N.W., the Khand, the Juanga, the Sowra of the N.E., the Ramusi of the Daulatabad and Hyderabad provinces, the Dher, Mang, Mhar, Pariah, Holar, Eskar, who are mostly predial slaves, the Berud near the Kolhapur state, the Beder population in the Raichore Doab, the homeless wandering Wadara, Upara, Kathadi, Dumar, Korawa, Yerkala, Banjara, the cowherd and shepherd Dhangar and Kurubar, the hill and forest Badaga, Erular, Male Arasar.

It was not till A.D. 1471 that the Mahomedans of the Dekhan extended their arms to the Northern Circars. At this time the Uriya raja of what is now the Ganjam country, died without issue, and his adopted son, Mungul Rai, and his cousin Humner (?) became competitors for the succession. During Mahmud's time (in 1512), the Bahmani dominion was dismembered, and five Dekhani kingdoms set up. The country now known as the Northern Circars fell under the dominion of the Kutub Shahi state, whose capital was Golconda, near Hyderabad. That portion south of the Godavery became tributary without difficulty; but Wistna Doe, or Gajapati, a powerful prince of Orissa, who ruled in Rajamundry and Chicacole, withheld submission, and it was not till A.D. 1571 that his pretensions were lowered. The Northern Circars was occupied by the British in 1766. The British now rule over the Ceded Districts of Bellary, Cuddapah, and Kurnool, over the S. Mahratta country, part of ancient Daulatabad; and they have assigned to them all Berar. The Nizam holds Hyderabad; and a few small chiefs rule in the Central Provinces, in Gondwana, along the line of the Godavery, in Orissa, and near the Kistna river.—*Elliot; Anal. Ind. Adm.* xi. p. 248; *Rennell's Memoir.*

DEKHANI HEMP is prepared from the Hibiscus cannabinus. It is also called Ambaree. Dekhani brown hemp of Bombay is from Crotalaria juncea, *Linn.*

DELADA, in the Malegawa temple at Kandy, is

the most devoutly worshipped relic of their religion which is possessed by the Buddhist nations of the East. Long before the Christian era, it was adored by the Buddhist sovereigns of Orissa, and was originally deposited in the great temple of Jaganath, then a Buddhist foundation. Its first deposition in Ceylon was in the 4th century A.D. The Buddhists of Ceylon have a tradition that whoever can succeed in retaining it must of necessity become the sovereign of the country. The Chinese traveller, Fa Hian, mentions amongst the precious relics worshipped in the 5th century by the Buddhists of Ladakh, a vase in which Buddha had spat, and one of his teeth; another tooth was similarly cherished by the king of Nakia, in Afghanistan, eastward of Ghazni. In an adjoining monastery the monks preserved the cuttings of his hair and nails. Fa Hian also describes a shadow of Buddha, which was shown to him at Nakia, but admits his inability to describe the process of its preservation.—*Tennant's Ceylon*, p. 239. See Buddha.

DELAI LAMA lives in the Bouddha La monastery outside of Lhassa, and is believed to be the living incarnation of the deity. But there are four or five subordinate incarnations in different parts of Tibet and Mongolia, objects of worship in the places where they reside, and by particular sects of Buddhists. In the centre of the Bouddha La is a building of four storeys, crowned by a dome covered entirely with sheets of gold.—*Fergusson*, p. 312.

DE L'HOSTE, CAPTAIN, an officer of the Bombay army, author of Memoirs on Scinde; On the Nerbudda River; Journal of a March from Ahmadabad to Sukkur, Upper Scinde; Notes on the Meteorology of the Phoonda Ghaut.—*Dr. Buist's Cat.; Bom. Geo. Trans.* i. p. 22.

DELIMA HEBECARPA, a creeper of Penang and Java. D. Sarmentosa, *Linn.*, a shrub with small white flowers in panicles; grows in the southern parts of Ceylon up to an elevation of 1000 feet.—*Thw.* p. 21; *Riddell; Voigt.*

DELMI, also called Buya, a family who overthrew the Samani. They were from the district of Mazenderan, in which their founder was a fisherman. They seized the western provinces of Persia, seized on Baghdad and the person of the khalif, and ruled (A.D. 932-1055, A.H. 321-448) for 100 years over an extensive territory in his name. The Amir Azan, Delmi, built the dam called Band-i-Amir, the Bendamir of Europeans. —*Elph.* p. 272. See Bendamir.

DELPHINIDÆ, a family of mammals of the order Cetaceæ, or the whale tribe, which live in the ocean. Amongst them are the whales, the largest of creatures now existing; also the dolphins, the porpoises, and the dugong. They have fin-like anterior extremities, the posterior extremities being absent, or rather their place supplied by a large horizontal caudal fin or tail. They have no hair on their skin, have no outer ear, and the bones of the neck are so compressed as to leave the animal without the appearance of a neck. Some of them eat plants, or are phytophagous; some are zoophagous, or animal-eaters. Seven species of cetaceans have been described from the Bay of Bengal, six of the family Delphinidæ, the seventh belonging to the sperm whales, Physeteridæ, and called Physeter (Euphysetes) simus. The family Delphinidæ, or porpoises, has 5 genera and 14 species, viz. Delphinus, 8 species; Steno, 2 species; Neomeris, 1 species; Platanista, 2 species; and Globiocephalus, 1 species. The family Balænidæ, or whales, has 4 genera and 7 species, viz. Balænoptera, 1 species; Balæna, 4 species; Physeter, 1 species; and Phocæna, 1 species. Sub-order Sirenia, herbivorous Cetacea, has 1 genus, Halicore, and 3 species.

DELPHINÆ.

Neomeris phocenoides, *Gray*, Delphinus melas, *Terns.* A dolphin of the Indian Ocean.

Phocæna communis, Ph. Rondeletii, *Willoughby*, Delphinus phocæna, *Linn.* Common porpoise.

Grampus sakamata, *Schlegel*, Sakam kuzira, JAPAN. Found off the coast of Japan.

G. Sieboldii, Naiso gata, JAPAN. A native of the coasts of Japan.

G. macrorhynchus, black fish of the South Sea whalers, inhabits the South Seas.

Delphinapterus Peronii, right whale porpoise of whalers. Is found on the Brazil bank, off the coasts of New Guinea, and the higher southern latitudes. It lives in large shoals, and its flesh is esteemed a delicacy. It is black, but the beak, the pectoral fins, and under part of the body are white.

Delphinus.—Seafaring people call the species of this genus bottle-nose, bottle-head, flounder-head, grampus, porpoise, sometimes even whale, and give the name of dolphin to the Coryphæna, a scomberoid fish which changes colour when dying. There are several species of Delphinus recognised.

D. delphis. The dolphin attains a length of 9 to 10 feet. Greek legends make it the friend and companion of man.

D. orca, the grampus, measures 25 feet in length, and is 12 or 13 feet round. It is the most voracious of all the dolphin tribe.

D. Heavisidii, hastated dolphin, the South Sea and Cape of Good Hope.

D. obscurus, the dusky dolphin, inhabits the Southern Ocean and Cape of Good Hope.

D. abusalam, Red Sea.

D. eutropia, Pacific Ocean and Chili.

D. Novæ Zealandiæ, the New Zealand dolphin, New Zealand and Cape Gable.

D. Forsteri, Forster's dolphin, Pacific Ocean between N. Caledonia and Norfolk Island.

D. Sao, inhabits Madagascar.

D. longirostris, Cape dolphin, about the Cape of Good Hope and the Southern Ocean.

Steno Malayanus, Dolphinus plumbeus, *Dussumier, Cuvier;* Delphinus Malayanus, *Lesson apud Cuvier;* Parampuan Laut, MALAY; Dolphin ventre roux of Paris Museum. Inhabits the Malabar coast and coasts of Penang. It is numerous, and rather heavy in its movements, but is rarely captured, except by chance in the stake-nets. It eats small fishes, Clupea and Glyphisidon cœlestinus, *Cuvier.*

S. frontatus, inhabits the Indian Ocean and the Pacific.

Platanista Gangetica, *Gray*, Delphinus Shawensis, *Bl.;* D. Gangeticus, *Roxb.;* Platanista of Pliny; Dauphine du Gange, *F. Cuvier;* Sou-sou of India; Susa of Buffon. Inhabits the Indian seas, the Ganges, and Irawadi.

Halicore Dugong, Trichechus dugong, *Gmel.;* Dugungus Indicus, *Ham.*; Indian dugong, ENG.; Le dugong des Indes, FR. Inhabits the shallows of the Indian Ocean and about Ceylon, where the water is not more than two or three fathoms deep. It does not appear to frequent the land or the fresh water. Its flesh is delicate. The dugong was noticed as occurring in Ceylon by the early Arab sailors, by Megasthenes (Fragm. lix.) and Ælian, and subsequently by the Portuguese. It is this creature which has given rise to the tales about mermaids, which have till the present day occupied the world, and doubtless had their origin in the tales of the Arab sailors. They are phytophagous, or plant-eaters.

H. Indicus, *Owen*, the Malay dugong, an inhabitant of the narrow seas of the Eastern Archipelago.

H. tabernaculi, *Ruppell*, the dugong of the Red Sea, has a feeble voice, and feeds on algæ. It is about ten feet long. In February and March, bloody battles occur between the males. Its flesh, teeth, and skins are utilized.

H. australis, manate of Dampier, white-tailed manate of Pennant. It is a native of the west coast of Australia.

H. Indicus, *F. Cuvier;* Trichechus dugong, *Erxleben;* Halicore cetacea, *Illiger;* Halicore dugong, *Cuvier apud Raffles;* Halicore tabernaculum, *Ruppell;* Dugungus Marinus, *Tiedemann apud Schinz.*

Dugong of Buffon.
Dugong, . . . MALAY. | Parampuan laut, MALAY.

Under these synonyms Dr. Theodore Cantor unites all the above, which he says inhabits the Red Sea, the seas of the Malay Peninsula, Singapore, Sumatra, the Philippine Islands, Moluccas, Sunda Islands, and New Holland.—*Cat. Mam. Mus.; E. I. C. Hartwig; English Cyclopædia*, p. 913; *Mr. Blyth in Beng. As. Soc. Journ.; Tennant's Ceylon; Dr. Theodore Cantor in Beng. As. Soc. Journal* of 11th December 1846.

DELPHINIUM, a genus of plants of the natural order Ranunculaceæ, of which several species, D. ajacis, D. Brunonianum, D. consolida, D. glaciale, and D. Oliverianum, occur in India and the south of Asia.

Delphinium ajacis, *Linn.*

Larkspur, ... ENG. | Na-furman, . . HIND.

Is cultivated in gardens in India during the cold season. The properties of the seeds agree with those of the stavesacre kind.—*O'Sh.*

Delphinium Brunonianum, *Cleg.*

Musk plant, . . . ENG. | Nepari, ... PANJ.

Grows in the Sutlej valley between Rampur and Sungnam, at an elevation of 14,000 feet. Smells powerfully of musk.—*Cleghorn's Panj. Rep.*

Delphinium glaciale, *Hooker*, of E. Nepal, is one of the most alpine plants in the world, growing at an elevation of 17,000 feet. It is abundant in the valley of the Chomiochoo near Tungu, in Tibet, and exhales a rank smell of musk.—*Hook.*

Delphinium pauciflorum, *O'Sh.*

Judwar, HIND. of BOMBAY. | Nirbisi of HIMALAYA.

A tuberous root in Sirmoor, without poisonous properties. The best comes from Lahore.—*O'Sh.*

Delphinium staphisagria, *L.*, the stavesacre or lousewort, a biennial plant, native of the Levant, Teneriffe, and Asia Minor. The powder taken internally acts as a violent cathartic and emetic. It is made into an ointment used for destroying vermin in the hair. The seeds intoxicate fish.—*O'Sh.* p. 168.

DELPHOS, a town in Greece where was an ancient oracle and place of worship, in a cave of the earth called Delphi, the word Delphi being synonymous with Yoni. See Delphi; Yavana.

DELUGE.

Tufan, ARAB., TURK. | Diluvio, . . . IT., SP.
Ueberschwemmung, GER.

The deluge of the Old Testament was known to the Chaldæans, the Aryan Hindus, the Parsees, the Hebrews, Christians, and Mahomedans. The last three religionists have their account of it in the 6th to the 9th chapter of Genesis, in which it is related how the Almighty, in consequence of the wickedness of mankind, brought a flood of rain for forty days on the earth, and destroyed all but Noah, his wife, his sons, and their wives, with pairs of all animals.

The Chaldeo-Babylonian narrative of the event is recorded in the great epic poem of the town of Uruk, three copies of which were made for the royal library, in the 8th century B.C., by order of Assur-bani-pal, king of Assyria, from a very ancient copy of it in the sacerdotal library of the town of Uruk, seemingly of the time of Abraham. The narrative follows with great exactness the same course as that of Genesis, which, in chapters vi. vii. viii. and ix., gives two different narratives. The cataclysm there noticed corresponds with the rising and overflow of the Tigris and Euphrates, from the middle of March to the end of May, and 26 days later the Jehovist makes Noah leave the ark.

Berosus, who had access to Babylonian records, says a god appeared to Xisuthros in a dream, prophesied a flood, and bade him bury sacred records in the City of the Sun at Sippara. The flood came, Xisuthros released birds to ascertain the state of the country, the occupants disembarked, and recovered the interred records.

The account which the Hindus have of the deluge is described in the Satapatha Brahmana of the Rig Veda, also with variations in the Mahabharata in the Bhagavata Purana, in the Agni Purana, and in the Matsya Purana. The first of these does not indicate who was the person saved; the Mahabharata indicates Brahma, and the Puranas, Vishnu. The first of the Hindu accounts of this is found in the Satapatha Brahmana. In it the 7th Menu Vaivasata one morning caught a fish, which told him of the coming flood, and, on the advice of the fish, he built a ship, which he attached to the horn of the fish, sailed over the northern mountain, and attached it to a tree till the waters subsided, when he found all living things destroyed.

The essence of the extract from the Agni Purana is this:—'When ocean quitted his bounds and caused universal destruction by Brahma's command, Vaivaswata Menu (Noah), who dwelt near the Himalaya mountains, was giving water to the gods in the Kritmala river, when a small fish fell into his hand. A voice commanded him to preserve it. The fish expanded to an enormous size. Menu, with his sons and their wives, and the sages, with the seed of every living thing, entered into a vessel, which was fastened to a horn on the head of the fish, and thus they were preserved.' In this fable the grand northern chain is given as that to which the abode of the great patriarch of mankind approximated.

In the Puranas it is not Menu Vaivasata, the 7th Menu, whom the divine fish saves from the deluge, but Satyavrata, the king of the Dasya, the man who loves justice and truth. The Bhagavata Purana says, 'In seven days, said Vishnu to Satyavrata, the three worlds shall be submerged.'

The West Iranians, now represented by the Parsees, had a knowledge of a deluge, in which Yima, the father of the human race, was warned by Ahuramazda to hedge in a square garden (vara), and cause the germs of men, beasts, and plants to enter it, in order to escape annihilation.

The Greeks had two legends as to deluges, one connected with Ogyges, king of Boeotia, the other the Thessalian legend of Deucalion, who, by the advice of Prometheus, built a coffer, which floated at the mercy of the waves, and after ten days stranded on Mount Parnassus. The former seems connected with a rise of the lake Cupais; the latter seems to relate to the whole earth.

The great inundation recorded in the historic books of China, as having occurred B.C. 2357, in the reign of the emperor Yao, seems to have been occasioned by a rise of the Hoang-ho, a local event long subsequent to the fully historic periods of Egypt and Babylon. The date of the completion of the works undertaken by the minister Yu, to repair the damage done by this flood, lies between B.C. 2278 and 2062.

DEMAVAND, in lat. 35° 50′ N., long. 52° E., a lofty peak on the Elburz range, between Irak Ajami and Mazandaran. A high road leads from Teheran by the town of Demavand to Ask, the capital of the district of Laurijan. The hot baths of Demavand are situated in this locality, at Garmsair, near Garm-ab. They are two in number: one, the tepid bath, is situated within 100 yards of the town of Ask, on the right bank of the river. It rises in an oval basin, measuring about 30 feet by 20, and about 3 feet in depth, formed by deposit from the spring, which gushes up with great force in the centre of the basin, together with a considerable amount of gas. The water contains sulphur, iron, soda, and magnesia. The other spring, which is situated about two miles further down the valley, and on the mountain of Demavand, is so intensely hot (148°), that the water has to be conducted through canals for some distance before it is collected in an artificial basin, in which the patients bathe. This water contains magnesia, iron, and sulphur in much larger proportions. Near Ask there is also a spring of cold water, strongly impregnated with iron. From Ask a road leads down to the town of Amil, but it is extremely dangerous, lives being lost annually from mules and their riders falling over the precipice, along the face of which it runs. Demavand bears N. 65° E. of Teheran, about 40 miles distant, and its pale lofty summit forms a magnificent pyramid as it shoots up from the high range of Elburz. The cone of Demavand is doubtless of volcanic origin, and consists of a number of ridges, which run from the summit to the base, leaving between them deep ravines filled in general with snow and ice, beneath which lies a mass of debris fallen from the upper part of the mountain. The height of the mountain is 21,520 feet. The cone terminates in a crater about 85 yards in diameter, which is nearly surrounded by jagged rocks.—*Chesney*, p. 35; *MacGregor*.

DEMETRIUS. Grecian kings, successors of Alexander, rulers in Syria; there were three of this name:—Demetrius I., surnamed Soter, B.C. 162; Demetrius II., surnamed Nicator, B.C. 147; Demetrius III., surnamed Eucærus, B.C. 94.

DEMOCRITUS, there is authority for believing, went to Egypt and Babylon, but his more distant travels to India are legendary.

DEMODURA, a variety of the Saligrama.

DEMON.

Esprit, ... Fr.	Demonio, . . . It., Sp.
Geist, ... Ger.	

Demon-worship is observed amongst all the non-Aryan races in India, but is perhaps carried out to its fullest extent, and most openly, amongst the Shanar people in the south of the Peninsula. This worship has little or no similarity to any Hindu cultus, being mostly directed to appease the malignancy of evil spirits, the shades or saya of persons who have recently died. In some parts of India there is a mixing up of demon and spirit worship and hero-worship with that of the Hindu deities. In the Dekhan, the deified sage Vithoba and his early expounders are extensively worshipped as local divinities. Byroba, the local deity of herdsmen, is largely worshipped in the Dekhan, as also is Kandoba, the deified hero of shepherds. Outside almost every Hindu village in the Dekhan, is a circle of large stones, sacred to Vetal, a demon-god of the non-Aryan races. Amongst the evil genii of all India is a being or beings called Rakshasa, of giant bulk, terrible teeth, who feast on dead bodies; and the Rakshasa is recognised by Aryan and non-Aryan. The bhoot, acknowledged all over India, more resembles the ghost of Europe. The Rev. Dr. Caldwell, in his work on the devil-worship of the Shanar, has shown how continuously the people of India are making new deities or demons. On the left bank of the stream, at the village of Assaye, at which Sindia's artillery was posted during that battle, is a tree beneath which is the tomb of an officer who fell during the battle, and his spirit is punctually worshipped by all the people of the neighbourhood. Sir Bartle Frere found an order in existence at Government House, Dapoorie, handed down by each non-commissioned officer, for the native sentry on guard, to present arms if a cat or dog, jackal or goat, entered or left the house or crossed near his beat during certain hours of the night, because it was a ghost of a former governor, who was still remembered as one of the best and kindest of rulers. The raja of Wanparty, one of that Reddi race who have founded small principalities along the banks of the Kistna river, died in 1868 at Hyderabad. He had led a turbulent life, and retained to the last much of the spirit of his youth. At the close of that year an outbreak of cholera occurred in that neighbourhood, which the people attributed to the spirit of Wanparty, and they made a clay image of him, riding on an elephant, and placed near him the clay image of a Brinjari, and worshipped all with the Mahabali sacrifice. In India, the Jan, the Gin of the Arabian Nights, is only known amongst the Mahomedans. In Sind, the Jan resembles the Pwecca, or Puck of Britain; the Jan of the Baluch hills is wayward and often morose, but not necessarily malignant. He is described as dwarfish, with large eyes, and covered with long hairs, and often changes to the form of a camel, goat, or other animal. On meeting a Jan, it is essential not to be alarmed, to use civil language. The Jan can become the servant of man, and work hard.

The deep-rooted belief in devils and in demoniacal possession was proved by the mortuary statistics of the N.W. Provinces of India for the year 1865, from which it appears that in 3463 cases, the relatives of the deceased would assign no other causes of death than witchcraft, evil spirits, and devils.

In Ceylon is a class of demigods, who, under the name of Yakshyo, are supposed to inhabit the waters, and dwell on the sides of Mount Meru, and who are distinguished not only for gentleness and benevolence, but even by a veneration for Buddha, who, in one of his earlier transmigrations, was himself born under the form of a Yakshyo. The Yakka, malignant spirits of Ceylon, are the authors of indefinite evil; and the Singhalese have a demon or Sanne for each form of disease, who is supposed to be its direct agent and inflictor, and who is

accordingly invoked for its removal; and others, who delight in the miseries of mankind, are to be propitiated before the arrival of any event over which their pernicious influence might otherwise prevail. Hence, on every domestic occurrence, as well as in every domestic calamity, the services of the Kattadia or devil-priests are sought, and their ceremonies performed, generally with observances so barbarous as to be the most revolting evidence still extant of the uncivilised habits of the Singhalese. Especially in cases of sickness and danger the assistance of the devil-dancer is implicitly relied on. An altar, decorated with garlands, is erected within sight of the patient, and on this an animal, frequently a cock, is to be sacrificed for his recovery. Another kind of demon-worship in Ceylon is a debased form of Hinduism, where the priest or Kapua is the performer.

Mr. Forbes, in the Ras Mala (p. 378), says the bhoot and pret of Gujerat are believed to reside in the place where funeral piles are erected, in trees which are not used for sacrificial purposes, such as the tamarind and the acacia, in desert places, at the spot where a death has occurred, or at cross-roads,—for which reason people set at these places food for the use of the bhoot. He is most at a loss for water to drink. The pipe of his throat is, it is said, the size of the eye of a needle, and he is continually thirsty enough to drink twelve gallons of water. The watchmen of Wuroon Deo, however, are stationed wherever there is water, to prevent the bhoot from drinking, and the thirst is therefore as continual as it is intense. The bhoot feed upon all kinds of refuse. The goblin of the best class—he, that is to say, whose funeral ceremonies have been duly performed, but who has been debarred from liberation by his own intense affection for earthly objects—is called a 'Poorwuj Deo,' and resides in his own house or in a sacred fig-tree. The Poorwuj Deo, like the Etruscan Lar, or the Grecian hero, is regarded as hovering about his former abode, averting dangers from the inhabitants, and bestowing blessings upon them. He frequently appears in the character of a serpent, and is then treated with great respect by the inmates of the house near which he resides. It is a common belief in Gujerat that serpents are always to be found wherever a hoard is buried, and that these are the bhoot of the deceased owners, who have remained upon earth from affection to their wealth. The Arabian Jin also frequents cross-roads; and the fairies of the Scottish lowlands carry bows made of the ribs of a man buried where three lairds' lands meet, as in A Midsummer Night's Dream (Act iii. sec. 2):

> 'Damned spirits all,
> That in cross-ways and floods have burial.'

'Desert places' in Gujerat correspond exactly with the 'dry places' (*ἀνύδρων τόπων*), assigned to the evil spirits in Matthew xii. 43, Luke xi. 24. The custom of placing food for spirits is very general throughout the world. In the dialogue of Dives and Pauper, printed by Richard Pynson in 1493, among the superstitions then in use at the beginning of the year, the following is mentioned: 'Alle that take hede to dysmal dayes, or use nycc observances in the newe moone, or in the newe yeere, as setting of mete or drynke by nyghte on the benche to fede alholde or gobelyn.' The powers which the bhoot and pret exercise are the following: They take possession of a corpse, and speak through its mouth; they exhibit themselves in the form which they possessed when living; they enter into a living man, and cause him to speak as they please; sometimes they afflict him with fever or various other diseases; sometimes they assume the forms of animals, and frighten people by suddenly vanishing in a flash of fire; sometimes, remaining invisible, they speak in whispers. A bhoot has been known to come to fisticuffs with a man, and to carry a man off and set him down in a distant place. It is even said that women are sometimes found with child by bhoots.

The Jain Shastras teach a different doctrine in regard to spirits from that which is taught by the Puranas. They assert that there are eight kinds of Vyuntur Deo, and eight of Wan-Vyuntur Deo, who reside below the earth. Each of these has two Indra, or sovereigns, ruling respectively the northern and southern regions, and who are in colour black, white, or blue. The Vyuntur and Wan-Vyuntur Deo appear upon earth, where they possess the bodies of men, exhibit themselves in various shapes, and perform many strange feats, whence their common name of Kootohulee (or surprising) Deo. Below them reside the Bhuwunputee Deo, who also sometimes appear on earth. Below these, again, are the Narkina or infernal spirits. Above this earth, in the atmosphere, five kinds of 'Deo of splendour' reside, the sun, moon, stars, and others. Above them, in twelve Deo Loka, the Deo who ride in chariots dwell; these, sometimes drawn by their own desire, or compelled by charms, appear in the world, but they do harm to no one. Above them are nine classes of Grivek, and five of Unootur Vimani. They are of great power, and never visit the earth. Men who have lived a life of austerity and righteousness are born again in these classes of upper or lower Deo, but the sinner is not born in them. Of old, a man who had performed the rite of 'Uthum' by fasting for three days, acquired the power of calling the Deo to him; but now, it is said, these Deo never visit the earth at any one's call.

In Gujerat, where people wish to prevent the removal of a jungle tree, they paint a trident upon it with vermilion, or, if that be inconvenient, throw down a number of stones at the root of the tree. Whoever, after this, passes by, is sure to add a stone or two to the heap, believing the place to be the residence of a bhoot. If stones are not easily procurable, a bit of old rag is thrown so as to adhere to the tree, and every one who passes by follows the example once set. They call the spot the 'Rag-uncle's.' In places where trees are scarce, these 'uncles' are very common, and people are much annoyed with the dread of touching them. The name 'uncle' is given to the bhoot by women as a term of respect. Men are less superstitious. Similarly, whenever in any place there is a hillock or mound upon which a few stones have been piled one above the other, every passer-by considers himself bound to add a stone to the heap, considering that the spot is the residence of some Deo, and that if any one raise a little temple there his house will flourish. Such monuments are also set up in places where a person has been slain or wounded. Cairns of

this kind are frequently connected with the dead,—

'On many a cairn's grey pyramid,
Where urns of mighty chiefs lie hid.'

—*Rasamala, Hindu Annals*, ii. pp. 379, 387; *Brand's Hindu Annals*, ii. p. 378. See Amma; Dehwar; Devils; Devil-Worship.

DENAR, a coin of Turkish Arabia. It is the denarius of the Romans. Dirhem is the drachma, and Felus (in the singular) is the follis of the Romans (Ouseley's Travels, ii. p. 490). The denarius was reduced by Augustus Cæsar from 90 to 60 grains, and by Constantine to 40 grains. —*Prinsep; J. B. A. S.*, Sept. 1832.

DENDENG. MALAY. Jerked beef; animal muscular fibre, preserved by drying in the sun, nearly the only mode of curing flesh in the Archipelago. Dendeng is made of the flesh of deer, oxen, and buffaloes, and by the Chinese of that of the wild hog. It is a considerable article of native trade.—*Crawfurd's Dict.* p. 120.

DENDROBIUM, a genus of air-plants of the natural order Orchiaceæ, which occur in south-eastern Asia and Australia.

album.	densiflorum.	macrostachyum.
aggregatum.	denudans.	Paxtonii.
alpestre.	filiforme.	pendulum.
aureum.	formosum.	pierardi.
barbatulum.	flavum.	pulchellum.
bicameratum.	Gibsonii.	pumilum.
Cambridgeanum.	graminifolium.	purpureum.
candidum.	heterocarpum.	ramosissimum.
calceolus.	Heyneanum.	secundum.
cœrulescens.	humilis.	stuposum.
clavatum.	Jenkinsii.	sulcatum.
crumenatum.	Jerdonianum.	teretifolium.
chrysanthum.	longicornu.	

The most interesting of the air-plants on the Tenasserim coast is a dendrobium, the flowers of which are white, with a yellow lip, three or four inches in diameter, and exquisitely fragrant. The plant blossoms in March, but it flowers to the close of October, and may be seen whitening under the emerald foliage of the groves nearly six months of the year. The Burmese call it the silver flower.

Dendrobium Ceraia.

Shih-huh, . . . CHIN. | Hwang-ts'au, . . CHIN.

This Chinese species of dendrobium grows on stones.—*Smith; Mason.*

DENDROCALAMUS GIGANTEUS, *Munro*, of Malacca and adjacent islands; one of the mightiest of all bamboos.—*V. Mueller.*

DENDROCALAMUS HAMILTONII, *Nees*, ascends the Himalayas from 2000 to 6000 feet, and rises 60 feet high. Its young shoots are edible. —*Brandis; Kurz; V. Mueller.*

DENDROCALAMUS STRICTUS. *Nees.*

Bambusa stricta, *Roxb.*	B. pubescens, *Lodd.*
B. verticellata, *Rottler.*	Nastus strictus, *Smith.*

Male bamboo, . . ENG. | Sadhanapu veduru, . TEL.

The male bamboo has nearly solid stems, and is much in use for spear-shafts, building purposes, and many other uses. It is absent from Ceylon, except in a cultivated state. It is very general throughout the Madras Presidency, on the dry slopes of the mountains up to 3000 feet elevation. It is common in Bombay, Bengal, and Burma, and extends to Singapore and Java. It flowers frequently, Colonel Beddome believes every year, and does not die down after flowering.—*Beddome.*

DENDROCALAMUS TULDA. *Nees.*

Bambusa tulda, *Roxb.*	Peka bans, Pia bans, HIND.
Tulda bans, . . . BENG.	Bashine bans, . . ,,

The common bamboo of Bengal. Its tender shoots are used as pickles.

DENDROCITTA RUFA, a pleasingly coloured rufous tree magpie, of all India.

DENDROCYGNA, a genus of water-fowl, known in India to sportsmen as the whistling duck. They are common to the northern and southern hemispheres. See Aves; Birds.

DENDROPHIDÆ, a family of harmless snakes, consisting of the following genera:—

Gonyosoma oxycephalum, *Boie*, Andamans, Assam, Pegu, Mergui.
G. gramineum, *Gunth.*, Khassya.
G. rænatum, *Gray*, Khassya.
Dendrophis pictus, *Gmel.*, Bengal, Assam, Andamans, Arabia, Pegu, Malacca.
Rhodopleuron, *Schl.*, Amboyna.
Chrysopsoelea ornata, *Shaw*, Shang-hai, Malacca.

The Dendrophis genus is common, known as tree-snakes, the name being from the Greek, Dendron, a tree, and Ophis, a serpent. They are also called whip-snakes.

DENGI is the common passage and ferry boat on the river Ganges. It is a comfortless ricketty-looking boat, and dangerous to travel in. Caught by the bore even in the middle of the river, if crowded, the dengis are swamped. The punsui is a light and fast boat, longer, broader, and sharper than the dengi, and more comfortable.

DENGUE, fugitive and erratic epidemic rheumatism. This disease, when it first appeared in the British West India Islands, was called the dandy fever, from the stiffness and constraint which it gave to the limbs and body. The Spaniards of the neighbouring islands mistook the term for their word Dengue, denoting prudery, which might also well express stiffness, and hence the term Dengue became at last the name of the disease.

DENKENACOTTA, the finest forest in the Salem collectorate of the Madras Presidency. It contains sandal-wood and acha-wood.—*Cons. Rep.*

DENMARK, a kingdom in the north of Europe. Tranquebar was the first possession of the Danes in India. It was purchased by them from a raja of Tanjore. They also held Serampore in Bengal, Porto Novo on the Coromandel coast, Eddova and Kolchery on the Malabar coast, and other forts and factories. On the 22d February 1845, for £125,000 sterling, Denmark ceded, by treaty, all its Indian possessions at Balasore, Tranquebar, and Frederick's Nagore, or Serampore.

DENWAR, a name given by Mr. Hodgson to a border tribe between Nepal and the Bhot country. See Chepang; Haiyu.

DEO, Dev, Deva, Dewa. SANSK. A god, a deity; hence Dewalai or Dewal, a house of idols, a temple, a pagoda. It is the Zeus of the Greeks and Deus of the Romans, and is possibly the original of the name of Siva, often called Seo, Sheo, Shev, or Sheb; Devi is a goddess. Deo is also used to designate a demon, an idol, genii, giant, a spirit, shade, or ghost, and a hobgoblin. The village tutelary deity or Dehwar of Hindustan, the Gramadeva of S. Indus, has a portion of grain set apart at each harvest. It is commonly represented by a shapeless stone, but has distinct names, as Bhum-sen, Kateswari, Hanwat, Hari Ram. In his concluding letter on Comparative Philo-

logy, Professor Spiegel illustrates from that source the Indo-Germanic notions of the deity. Deva, Sanskrit, Latin Deus, denotes shining, glittering. It is an appellative, and occurs in the plural as often as in the singular; whence it has justly been inferred that even before their separation the Indo-Germans were polytheists; likewise Bhaga, the distributor, is used also in the plural. Well-attested names of deities are connected with Deva. Dyaus is heaven; Apam napat, aquarum nepos, is the generative power residing in the waters. See Dehwar; Demon; Devil.

DEO, seat of the Deo rajas, one of the most ancient families of Behar, in the Aurangabad subdivision, Gaya district. They trace their descent from the Ranas of Udaipur (Oodeypore). Four generations of unswerving loyalty to the East India Company and the Queen Empress have been rewarded by liberal grants of land and villages; and Sir Jai Prakash Singh, K.C.S.I., received the title of Maharaja Bahadur, with a Knight Commandership of the Star of India, for his services in 1857. It is the seat of a famous temple, at which thousands of people congregate twice a year, to hold the Ch'hat festival in honour of the sun-god.—*Imp. Gaz.*

DEOBAND, from Deo-ban, a sacred grove; a small town in Saharunpur district, N.W. Provinces, of the same name. Half a mile from the town is a small lake, the Devi-kund, whose banks are covered with temples, ghats, and sati monuments, which are much frequented. Deoband is of Hindu origin, with a legendary history of 3000 years. The Pandava are said to have passed their first exile within its precincts. The fortress was one of the earliest to fall before the Musalman saint, Salar-Masaud Ghazi. A religious assembly takes place yearly in a neighbouring wood.—*Imp. Gaz.*

DEODAR. Hind. The Cedrus deodara, *Loudon*, is a valuable timber tree in the forests of the N.W. Himalaya under the Panjab Government, and in the Feudatory States of Jummu and Kashmir, in the Liawa and Uj divisions, on the banks of the Chenab, with the Bhutna, the Marru Wardwan, the Jhelum below Baramula, also the Kishenganga. The cones of the deodar are identical with those of the cedar of Lebanon; the deodar has generally longer and more pale bluish leaves and weeping branches, but these characters seem to be unusually developed in English gardens, for several persons, well acquainted with the deodar at Simla, when asked to point it out in the Kew Gardens, have indicated the cedar of Lebanon; and when shown the deodar, declare that they never saw that plant in the Himalaya. Deodar is also applied to the Chickrassia tabularis and Juniperus excelsa; and in Kulu and on the Beas, deodara is applied to the Cupressus torulosa and the Sethia Indica.—*Hooker's Him. Jour.* ii. p. 41.

DEO-DHANGA, or holy hill, is a peak in lat. 87° E., upwards of 29,000 feet high? Deo-dhanga and Mount Everest, 29,002, are about 100 miles N.E. of Khatmandu; both are midway between Gosainthan and Kangchun.—*Beng. As. Soc. Jour.* 1856.

DEO-GHANTA. Hind. Sacred metal bells.

DEOGHUR, or Byjnath, is a small town in the zilla of Birbhum, famous for its temples, visited every year by thousands of pilgrims from the North-West Provinces of India. It is situated in the great table-land which extends from near Bardwan to Dunwa Ghat, in Behar. Granite, syenite, and gneiss, traversed by greenstone dykes, are the prevailing rocks around. Veins of lead ore, partly pure, partly in the state of galena or sulphuret, traverse the principal copper vein at right angles. Both have been analyzed, and found of remarkable richness. The nearest coal is forty miles off; the nearest point on the river where the ore could be shipped for Calcutta is sixty, the road being tolerable all the way. The copper might in all likelihood be separated from the malachite by stamping and washing.

DEOGIRI, now called Dowlatabad, is about 12 miles from Aurangabad, in the Dekhan; is a scarped rock of considerable height, with a roadway leading up through the rock. Its position is commanding, and from the most ancient times was a stronghold of the rulers in that part of India. The name seems to have been sometimes written Deoghur. Ala-ud-Din, nephew and general of Jalal-ud-Din, in A.D. 1294 swept across the Nerbadda and captured Deogiri, and besides money and jewels, obtained the cession of Ellichpur and its dependencies, and the raja was further to pay tribute annually. Ala-ud-Din, on his return, was met by his uncle, Sultan Jalal-ud-Din Khilji, whom he assassinated, 1295, as he was patted on the cheek, and then ascended the throne. Subsequently he invaded and conquered Gujerat, and took its beautiful rani, Kamala Devi, into his household. About A.D. 1300 he repulsed an invasion of the Moghuls under Katallagh Khan. In A.D. 1303 he captured the fort of Chittore, but was immediately recalled to check an invasion of the Moghuls, whom he repulsed a third and fourth time in 1305 and 1306. In 1306 he sent Malik Kafur, his general, a eunuch, and who had been the slave of a merchant at Cambay, to chastise the raja of Deogiri, which Kafur effected, and also subdued the Mahrattas. In A.D. 1309 Malik Kafur captured Warangal, then the capital of Telingana. In 1310 he reduced Belal-Deo, raja of the Karnatic, with whom the Belal dynasty ended. He overran the whole of the eastern provinces as far as Ramisseram, opposite Ceylon, where he erected a mosque to commemorate his victories; and in A.D. 1311 he returned to Dehli, laden with plunder. In 1312 he despatched Kafur a second time to punish Ram Deva, king of Deogiri, and son of the former Ram Deo, who was put to death, and the kingdom annexed. He next carried his arms over all the Mahratta territory and the Karnatic, and soon after died.—*Brigg's Nizam.* See Dowlatabad.

DEO-KORA, the household god of the Garo race. It is a small bell-metal dish with embossed figures, hung up in the house and worshipped, and sacrifice offered. See Deo-Ghanta.

DEOLEE, in Rajputana, in lat. 25° 54′ N., and long. 74° 53′ E., is the headquarters of the Harauti and Tonk political agency, comprising the states of Bundi, Kotah, Tonk, Jhallawur, and Shahpura. It is 57 miles S.E. from Nasseerabad.

DEO MUNNI? sacred beads of Assam.

DEOOLA are temples sacred to Jaganath; they rise from the foundation in a gradual slope like a sugar-loaf, with an iron image of Garuda on the pinnacle. These temples, made of brick, are ascended by a flight of steps, and contain only one room. The word is Deo-alaya, the House of God.

DEO-PANI, a stream which falls into the Brahma Kund.

DEO PATTAN, a district in the S.W. of India, in which was the temple of Somanath taken by Mahmud of Ghazni in 1024.

DEOPRAYAG, a village in the Garhwal district of the N.W. Provinces, in lat. 30° 8′ N., and long. 78° 39′ E., at the confluence of the Alaknanda and the Bhagirathi, and 2266 feet above sea-level. The united stream takes the name of the Ganges, and the point of junction forms one of the five sacred halting-places in the pilgrimage which Hindus make to Himachal. The village is perched 100 feet above the water's edge, on the scarped side of a mountain, which rises behind it to a height of 800 feet. The great temple of Rama Chandra, built of massive uncemented masonry, stands upon a terrace in the upper part of the town, and consists of an irregular pyramid, capped by a white cupola with a golden ball and spire. Religious ablutions take place at three basins, excavated in the rock at the point of junction of the holy streams.

DEORA is the tribe of the Sarohi princes, chiefs of Abu and Sarohi. It is a branch of the Chauhan Rajputs, whose cradle is said to be on the summit of Abu, whence they spread over the regions skirting the Aravalli to Ajmir, establishing many minor principalities, as Nadol, Jhalor, and others, long before the Rahtor of Jodhpur had set foot in Maroo, but were yet enjoying all the pomp of royalty in the splendid city of Kanauj. Sarohi, Abu, and Chandravati then appertained to the Pramara race; nor was it until the thirteenth century that the uncle of Kana Deo, prince of Jhalore, treacherously obtained possession of the former with its dependencies, by the slaughter of the Pramara race. The city, now the residence of the Deora princes, is comparatively of modern date, the ancient Sarohi lying behind a second range of mountains. The Rahtor and Deora are the bravest of the Rajput races. Achilgarh, or the immoveable castle, is the name of the fortress of the Deora.—*Tod's Tr.* p. 61; *Rajasthan*, ii. pp. 39, 57; *Annals of Mewar*, p. 334.

DEORHI. Hind. A threshold, a household; the household of a person of rank, generally of a Mahomedan noble, answering to the Bab of the Constantinople palace, on the Porte, also to the foot of the throne.

DEORI, priests of the Aka race. Deoshi, the sacrificial priest of the Kooch. Deota, a deity.

DEOTSA, a small plateau or table-land adjoining that of Balti. It and the Balti table-land form a territory 60 miles long and 36 broad, and are part of the territory of Balti. It is high above the forest line or birch region, and tenanted only by the marmot, with a few dwarf willows and herbaceous species as its plants. It is a thinly-inhabited steppe, 13,000 feet above the sea-level, between Skardo and Kashmir, belonging to Baltistan.—*Vigne.*

DE PAYVA. See Pedro da Covillam.

DERA BULLU, a small territory in the Kouen Lun valley, in Turkestan; the valley of the Yarkand river, near this, is 16,883 feet above the sea, in lat. 35° 49′ N., and long. 77° 31′ E.

DERAH or Diarah, Hind., answers to Chur in Lower Bengal, and signifies the long rich alluvial flats which generally line the banks of such rivers as the Gunduk, the Ganges, and the Kosai, and increase, diminish, or completely melt away, owing to the action of the stream in the rainy season.

DEREAH. Hind. Bhera, Mahr. A wood of the Nagpur forests, of great strength; the average logs are from 6½ to 10½ feet long, and from 2 to 3 feet in girth. It has a winding, and, as it were, netted grain, from which, as well as the extraordinary toughness of its fibres, butchers invariably use it for chopping blocks.—*Captain Sankey.*

DERI, a dialect of the Persian language, which is used by the Zoroastrians in Persia; it is not the Zend. It is also described as an ancient dialect of Persian spoken at Balkh, but also as the modern Persian tongue. It is derived from the Parsee, which displaced the rougher Pehlevi, though Pehlevi is still used in the sacred writings at Sherwan.

DES, Desa. Sansk. In Rohilkhand, the Des is the cleared villages on the borders of the Terai; in the Himalayan regions it means the plains of Hindustan. With the Mahrattas, it means the country between the Syhadri and Balaghat hills, the Karnatic and the Godavery river; it also means any plain, open, or champagne country. In the Dekhan it is used to signify a champagne country. Of the words derived from it and its other applications, Des is a native country; Desmukh and Despande are Mahratta revenue officers; Desai, a superintendent of a district; Desastha, Desath or Deshasth, a Maharatta Brahman; Par-desi, a foreigner.

DESERTS of Asia, biaban of the Persians, and Chul of Turkestan. A chain of deserts extend from the Canary Islands in the Atlantic Ocean to the Yellow Sea, crossing Africa and Arabia, through parts of Central Persia, Seistan, Korasan, Afghanistan, and Baluchistan, onwards to the east of the Indus, into Rajputana; and the link, broken by the Himalaya, is found in the great sand sea of the Gobi. They are mostly uninhabitable, from the absence of water and the intense heat, but have occasional oases of rich vegetation, where water springs occur, or where the Nile, the Tigris, the Euphrates, the Indus, and their affluents enrich the country. To the westward, the seas of sand of the African and Arabian wastes are seldom raised above, often sink below, the level of the ocean. To the eastward of the rich tract in Persia, Kerman, Seistan, Chinese Tartary, and Mongolia, the desert consists of series of plateaux, having from 3000 to nearly 10,000 feet of elevation.

The *Eastern Desert of Egypt*, near Jabl Gyr, has ancient green, red, and purple porphyry quarries at Jabl Dakkan (Mons Porphyritis); and breccia quarries occur at Wadi Keuch, which were worked in the time of the first Osirtasen, supposed to have been the Pharaoh who ruled over Egypt in the time of Joseph.

The *Desert of Arabia* extends from where the borders of Syria touch the Euphrates in the north, to near the coast of Hadramaut in the south. It is continued between Syria and the Euphrates; between Hejaz and Jabal Shammar and the Najd provinces, and between Yemen and Oman, and again on the east, between the provinces of Najd and Al Hasa on the Persian Gulf.

There are oases in this desert, and in the winter and after rains are scattered patches of grass, and the Bedouin find pasture on the borders; but in

the hot season the sun pours down its heat in unopposed fierceness. That part miscalled the Syrian desert by Europeans, was the Arabia Deserta of Ptolemy, and is now known as Al Hammad. That in the neighbourhood of Damascus is called Badiyah us Sham.

The *Desert of Syria* lies between Mesopotamia and the coast region of Syria and its southern part, Palestine. It is a great chalk plateau, about 1800 feet above the sea, bounded on the west side by a great depression.

Desert of Kharazm.—Between the Caspian and the Oxus is a desert tract of firm gravel, broken into undulations, and covered with a rich pasture of aromatic herbs, and water is found in some of the hollows on its surface. It is known as the desert of Khiva or Kharazm, also as the Regan, and from June to September is liable to destructive hot winds, in which man and beast perish, even the hardy camel perishing miserably. The Baluchi call this wind Julo, the flame, also Bad-i-Simoom, or the poison wind. There is great heat of skin, quickly ending in death. The approach of the wind is ushered in by an oppressive calm in the air, and a degree of heat that affects the eyes; the precaution then adopted by travellers is to cover themselves over, and lie prostrate on the earth. Pottinger says (Travels, p. 136) that any cloth, however thin, will obviate the deleterious effects of the Bad-i-Simoom on the human body.

The *Great Salt Desert of Central Persia* is called the Daria-i-Kavir. It stretches north and south across the eastern part of that country from Nishabor in the north, to Kirman on the south, and sinks to its lowest level opposite to the Seistan basin. It may be below the sea-level, and is certainly not far above it. It is the principal of the Kavir or Kafeh salt swamps of Persia. Wherever the alluvial soil of the Persian plateau is exposed to sufficient moisture, either by the overflow of rivers, by surface drainage from the hills, or by the want of sufficient slope to carry off desert rainfall, a saline efflorescence is produced, which, forming a thin whitish crust on the surface, retains the moisture beneath for a considerable time, and thus creates in winter and spring a treacherous and impassable bog. About lat. 34° N. it is 6 miles wide.

The *Great Desert of Khorasan* commences east of Koom, and stretches almost due east to the north of Khoor. From near this it turns to the south, and gradually lessens in width. At its broadest, S. of Damghan, it is about 150 miles broad, but generally where the roads cross it its breadth is from 80 to 100 miles. It is a barrier more difficult than any mountains in N. Persia and Khorasan (MacGregor, Khorasan), a desert plain without one blade of grass, one leaf of any kind, or living thing of any sort. Its dark soil is covered with a thick saline efflorescence, which glitters painfully on the eyes, and is felt crunching under the feet. Here and there are darker moist patches. The Kavir is honeycombed with holes about 9 inches deep, and the size of a man's head.

The *Desert of Kizl-Koom* (red sand) extends over an area of 35,000 square miles.

The desert called *Reg-i-Sistan* or *Reg-i-Baluchistan*, on the S.W. part of Afghanistan, extends from the highlands of Kalat to the boundary or Sarhad mountains south of Seistan. It extends from the Mushti range in the south, to the plain of Kandahar on the north, where it ends in a belt, ten or fifteen miles wide, of high desert cliffs, called Chol or dry land. The nomades pasture their cattle there in winter, as it produces a rich pasture at that season of the year.

The *Great Indian Desert*, on the eastern side of the Indus, lies between Sind and Rajputana. It is a sandy tract, but is covered with shrubs, and in places small trees grow. The population is thin, but villages are found throughout; and immense herds of camels, cattle, sheep, and goats are pastured. It is entirely destitute of streams of water, with but few hills of rock, and a large portion of the surface consists of sandhills of considerable height, called Thar or Thurr, or T'hul. When rain falls, crops of bajra (Penicillaria) are raised; and when they fail, the population live principally on the milk of cattle and on imported grain. Throughout the sandy tracts of this desert the vegetation consists of the Calligonum polygonoides (Phog, HIND.; Tob, SIND.), Ærua javanica (Bhui, HIND.; Bahusa, SIND.), Anabasis multiflora (Lana, HIND.), and Mart, a coarse grass growing in tufts, abounding on the sandhills, and spreading for miles on the plains. Phog and Bhui, also Orthanthera viminea (Kip, HIND.), are peculiar to the sandhills. Between the sandhills, Calotropis procera, Salvadora Persica, Acacia rupestris (or Kejri), Capparis aphylla, Zizyphus jujuba, and a few other plants, are commonly found. After rain, numerous herbs spring up, and a grass called Brut (? Cenchrus biflorus), the spiny seeds of which attach themselves to one's clothes like burrs. Divested of their spiny covering, they are made into a kind of bread. Birds are numerous; hyænas, wolves, jackals, the desert fox, Vulpes leucopus, V. Bengalensis, also Lynx Felis caracal occur; and the desert jerboa rat, Gerbillus hurrianæ, in incredible numbers, perhaps a burrow in every square yard.

A traveller proceeding from the 'Khachee' or flats of Sind to the east, sees the line of the desert distinctly marked, with its elevated teeba or sand ridges, under which flows the Sankra, which is generally dry, except at periodical inundations. These sandhills are of considerable elevation, and may be considered the limit of the inundation of the 'Sweet-river,' the Meetha Muran, a Scythic or Tartar name for river, and by which alone the Indus is known from the Punjaud to the ocean. The teeba or sandhills occupy a large tract in Eastern Sind, extending the whole length of the province along the edge of the Indus alluvium. They are in ridges which run E. and W. or N.E. and S.W. Sir B. Frere says some of them are 400 or 500 feet high.

The Runn, Ran, or Rinn is a salt marsh, 150 miles broad, into which the Loni or Looni or salt river enters, and then runs on to the sea. The Looni rises in the Aravalli. In Marwar it separates the fertile land from the desert, afterwards runs through the Chauhan territory, dividing it into the eastern part, called Raj-Bah or Sooi-Bah, and the western part, called Parkar or 'beyond the Khar or Looni.' The Kaggar rises in the Siwalik Hills, flows under Bhatnair walls, and once emptied itself between Jeysulmir and Rori Bukkur. The rainfall is 18 inches at Nagar Parkar, 11·8 inches at Omerkot, but much less near Jeysulmir and the centre of the desert.

The Desert of India is known on its borders as Maroost'hali, the region of death, from Mri, SANSK., to die, and St'hali, arid or dry land, but is also known as the desert of Rajputana. Maroost'hali is bounded on the north by the flat skirting the Gara; on the south by the Runn, and Koliwara; on the east by the Aravalli; and on the west by the valley of Sind. It covers an area of 77,600 square miles. But for the Aravalli, which runs N.E. and S.W., dividing Rajputana into two equal parts, Central India would be submerged in sand; nay, lofty and continuous as is this chain, extending almost from the sea to Dehli, wherever there are passages or depressions, there floating sand-clouds are wafted through or over, and form a little t'hul even in the bosom of fertility. Whoever has crossed the Bunas near Tonk, where the sand for some miles resembles waves of the sea, will comprehend this remark. This desert has small scattered spots of fertility, with great arid portions called thar, thur, or t'hul, denoting tracts particularly sterile, therefore the converse of the oasis of the Greeks, and each with a distinct name, as the t'hul of Kawur, the t'hul of Goga, and others. A tradition exists to the effect that in remote ages it was ruled by Powar or Pramara Rajput princes from nine fortresses, viz. Poogul, Mundore, Maru, Abu, Kheralu, Parkar, Chotun, Omerkot, Arora, and Lodorva. From Bhalotra on the Looni, throughout the whole of Dhat and Oomra-i-Soomra, the western portion of Jeysulmir, and a broad strip between the southern limits of Daodputra and Bikanir, there is real solitude and desolation. But from the Sutlej to the Runn, a space of 500 miles of longitudinal distance, and varying in breadth from 50 to 100 miles, numerous oases are found, where the shepherds from the valley of the Indus and the T'hul pasture their flocks. The springs of water in these places have various appellations, ter, par, rar, dur, all expressive of the element, round which assemble the Rajur, Soda, Mangulia, and Sahrai, inhabiting the desert. The whole of Bikanir and that part of Shekhavat north of the Aravalli are comprehended in the desert. Jeysulmir is nearly in the centre of what may be termed entire desert, is in fact an oasis, but the largest oasis of the desert, everywhere insulated by immense masses of t'hul, some of which are 40 miles in breadth. The rock on which the castle is built has three peaks or tri-cuta. Westward from this, from 400 or 500 miles, with 100 or 200 miles in breadth, are little scattered oases, on which the shepherds of the desert have their huts.

The whole of the Bikanir principality, with the exception of a few isolated spots or oases scattered here and there, consists more or less of sand. From the eastern to the western boundary, in the line of greatest breadth, it is one continuous plain of sand, though the teeba or sandhills commence in the centre of the country, the principal chain originating in the tracts bordering the eastern valley of the Indus, and terminating its elevations about the heart of Bikanir. On the N.E. quarter, from Rajgurh to Nohur and Raotsir, the soil is good, being black earth, slightly mixed with sand, and having water near enough to the surface for irrigation; it produces wheat, gram, and even rice in considerable quantities. The same soil exists from Bhatnair to the banks of the Gara. The whole of the Mohilla tract is a fertile oasis, the teeba just terminating their extreme offsets on its northern limit; being flooded in the periodical rains, wheat is abundantly produced. In 1881, the population of Bikanir was 509,021.

The deterioration of the Bikanir region, within three centuries since the Rajput supplanted the Jit, almost warrants our belief of the assertion that these deserts were once fertile and populous. The princes of Bikanir used to take the field at the head of 10,000 of their kindred retainers. The commercial towns of Churu, Rajgurh, and Rinne, as entrepôts, supplied the country with the productions of Sind and the provinces to the westward, or of those of Gangetic India. The same cause affected Jeysulmir, Bikanir, and the more eastern principalities. The Maldote of Jeysulmir, and the Larkhani of Jeypore, were as notorious as the Beedawut of Bikanir; and to these may be added the Sahrai, Khossa, and Rajurh, in the more western desert, who in their habits and principles Tod described as demoralized as the Bedouins of Arabia. The line of greatest breadth of Bikanir extends from Poogul to Rajgurh, and measures about 180 miles, while the length from north to south between Bhatnair and Mahajin is about 160 miles; the area may not exceed 22,000 miles. Formerly they reckoned 2700 towns, villages, and hamlets scattered over this space, one-half of which are no longer in existence. The tract to the N.W. of Jaetpur in Colonel Tod's time was perfectly desolate, and nearly so from that point to Bhatnair; to the N.E. the population was but scanty, which observation also applied to the parts from the meridian of Bikanir to the Jeysulmir frontier; while internally from these points it is more uniform, and equals the northern parts of Marwar. Three-fourths of the people are Jit; the rest are their conquerors, descendants of Becka, including the Sarsoto Brahmans, Charans, Bards, and a few of the debased classes, whose numbers are not one-tenth of the Rajputs. In Colonel Tod's time the Jit were the most wealthy as well as the most numerous portion of the community. Many of the old Bhumia landlords, representatives of their ancient communal heads, were men of substance. *Sarsote*, properly Saraswati, Brahmans are found in considerable numbers throughout this tract. They aver that they were masters of the country prior to the Jit colonists. They are a peaceable, industrious race, and without a single prejudice of the order. They eat meat, smoke tobacco, cultivate the soil, and trade even in the sacred kine. The *Charan* are the sacred order of these regions. The warlike tribes esteem the heroic lays of the Bard more than the homily of the Brahman. The Charan are throughout reverenced by the Rahtor, and hold lands, literally, on the tenure of an old song.

The *Jhallawar* or *Jhalore* tract is one of the most important divisions of Marwar. In 1881 its population was 340,488. It is separated from Sewanchi by the Sookri and Khari, which, with many smaller streams, flow through them from the Aravalli and Abu, aiding to fertilize its 360 towns and villages, forming a part of the fiscal domains of Marwar. The important fortress of Jhalore, guarding the southern frontier of Marwar, stands on the extremity of the range extending north to Sewanch. *Sewanchi* is the tract between

the Looni and Sookri. Macholah and Morseen are the two principal dependencies of Jhalore. Beenmal and Sanchore are the two principal divisions to the south, each containing 80 villages. Bhadrajoon, a fief of Jhalore, has a Joda chief and Meena population.

The *T'hul of Goga* is very thinly inhabited; it has many sandhills, t'hul-ka-teeba.

The *T'hul of Tiruroe* lies between Goga Deo and Jeysulmir.

The *T'hul of Khawar* is between Jeysulmir and Barmair, in the most remote angle of Marwar.

Barmair t'hul, also called the *Malli-nat'h-ka-t'hul*, is occupied by cattle-breeders.

The *Kherdar*, or land of Kher, and Nagar Gooroh, on the Looni, are the chief t'hul.

The *Chauhan Rajput* of the desert has, on the N. and E., the above tracts of Marwar, to the south Koliwara and the Runn, to the west the desert of Dhat. The sterile ridge which passes through Chotun to Jeysulmir passes west of Bankasir on to Nagar Parkar. The wells are 65 to 130 feet deep. The Sahrai, Khossa, Koli, and Bhil inhabitants are predatory. The Chauhan Rajput does not wear the zonar, and does not much respect the Brahmans. The Pit'hil and Banya are farmers and traders.

Malli and Noe, gardeners and barbers, are important members of every Rajput family, and to be found in all the villages, of which they are invariably the cooks.

Choora and Thaori were, in Colonel Tod's time, actually castes of robbers,—the former from the Lakhi jungle, the latter from Mewar. Most of the chieftains had a few in their pay, entertained for the most desperate services. The Bahaderan chief had expelled all his Rajputs, and retained only Choora and Thaori. The Choora were highly esteemed for fidelity, and the barriers and portals throughout this tract were in their custody. They enjoy a very singular perquisite, which would go far to prove their being the aborigines of the country, namely, a fee of four copper coins on every dead subject, when the funeral ceremonies are over.

The *Rahtor* of Bikanir bear a martial reputation. The Rahtor of the desert have fewer prejudices than their more eastern brethren; they will eat food without inquiring by whom it was dressed, and will drink either wine or water, without asking to whom the cup belonged. They would make the best soldiers in the world if they would submit to discipline, as they are brave, hardy, easily satisfied, and very patient; but in the inordinate use of opium, and smoking intoxicating herbs, are said to exceed all the Chatees Rajcula, the thirty-six royal tribes of India. The piala or 'cup' is a favourite with every Rajput who can afford it, and is, as well as opium, a panacea for ennui, arising from the absence of all mental stimulants, in which they are more deficient, from the nature of the country, than most of their warlike countrymen.

Bhatnair, now an integral part of Bikanir, was anciently the chief abode of another Jit community, so powerful as at one time to provoke the vengeance of kings, and at others to succour them when in distress. The Bhatti annals confirm what might have been assumed without suspicion, that to a colony of this race Bhatnair owes its name, though not its existence. The whole of the northern part is called Nair in the ancient geographical nomenclature of Maroost'hali; and when some of the Bhatti clans became Mahomedan proselytes, they changed the vowel a to u, to distinguish them from the parent stock, viz. Bhatti for Bhutti. In all probability, the Yadu-Bhatti is the original Yuti colony from Central Asia; and the Jit prince of Salpur was the predecessor of these very races. Bhatnair has attained great historical celebrity, from its position being in the route of invasion from Central Asia to India. It is more than probable that the Jit race who resisted the advance of Mahmud of Ghazni in a naval warfare on the Indus, had long before that period established themselves in the desert as well as in the Panjab; and as we find them occupying a place amongst the thirty-six royal tribes, we may infer that they had political power many centuries before that conqueror. In A.D. 1205, only twelve years after the conquest of India by Shahab-ud-Din, his successor Kutub-ud-Din was compelled to conduct the war in person against the Jit of the northern desert, to prevent their wresting the important post of Hansi from the empire; and when the unfortunate and intrepid queen Razzia, the worthy heiress of the great Firoz, was compelled to abandon her throne to a usurper, she sought and found protection amongst the Jit, who, with their Scythic brethren the Ghikar, assembled all their forces, and marched, with their queen at their head, like Tomyris of old, to meet her foes. She was not destined to enjoy the same revenge, but gained a glorious death in the attempt to overturn the Salic law of India. Again, in A.D. 1397, when Timur invaded India, Bhatnair was attacked for having distressed him exceedingly on his invasion of Multan, when he in person scoured the country, and cut off a tribe of banditti called Jit. In short, the Bhatti and Jit were so intermingled, that distinction was impossible. Shortly after Timur's invasion, a colony of Bhatti migrated from Marote and Phoolra, under their leader Bersi, and assaulted and captured Bhatnair from a Mahomedan chief.

The Indian desert differs very materially from that portion of the great African desert in the same latitudes. Water at 20 feet, was found at Mourzuk by Captain Lyon; this, in the Indian desert, is unheard of. At Daismok'h, near the capital, the wells are more than 280 cubits, or 300 feet, in depth; and it is rare that water fit for man is found at a less distance from the surface than 60 feet, in the tracts decidedly termed t'hul or desert; though some of the flats or oases, such as that of Mohilla, are exceptions, and abundance of brackish water fit for cattle is found throughout at about 30 feet. All the wells are lined with basketwork made of p'hok twigs, and the water is generally drawn up by hand-lines. Water is sold in all the large towns by the Malli race, or gardeners, who have the monopoly of this article. Most families have large cisterns or reservoirs called tanka, which are filled in the rainy season. They are of masonry, with a small trap-door at the top, made to exclude the external air, and having a lock and key affixed. Some large tanka are established for the community, and this water keeps sweet for eight and twelve months' consumption.

It was through this tract that Humayun sought refuge to the Dhat country; and at Omerkot, its capital, Akbar was born. Omerkot was

wrested from the Soda race by the Rahtor tribe of Marwar, and since then the chiefs of the expelled clan have dwelt in Chore, 15 miles N.E. of Omerkot. At one time, every third year brought famine. The Soda women of this desert tract of Dhatta are proverbially handsome. In this desert and in the valley of the Indus are the Soda, Cat'hi, and Mallani, descendants of the Sogdi, Cat'hi, and Malli, of Getes and Yuti, many of whom call themselves Baluch, or keep the ancient name of Numri, whilst the Zj'hut or Jut retain their primitive appellation; also remains of the Johya and Dahya, who, with the Gete, Jut, or Hun, hold places amongst the 36 royal races of ancient India. The Baraha and Lohana tribes are there, the Sahrai, the great robber of the desert, the Bhatti, Rahtor, Joda, Chauhan, Kaorwa, Johya, Sultano, Arora, Khoomra, Sindil, Maisuri, Bishnavi, Jakhur, 'Shiag, Ashiag, and Pooniah.

The origin of the Mahomedan Kullora and Sahrai is doubtful, but the Nyad or proselytes from Rajput or other Hindu tribes are Jut, Rajur, Oomra, Soomra, Mair or Mer, Mor or Mohor, Baluch, Loomri or Looka, Sumaicha, Mangulia, Baggreah, Dahya, Johya, Khairowi, Jangurea, Oondur, Bairowi, Bawuri, Tawuri, Chrendea, Khossa, Sudani, Lohana. These converts were ferocious and intolerant.

Arora, a thrifty race, tradesmen and farmers.

Bhattiah, formerly martial, now traders like the Arora, and both these have commercial agencies all over India.

Brahman, Bishnavi, cultivators and graziers, numerous in Dhat, some in Chore and in Omerkot, Dharnas, and Mitti.

Daodputra, founded by Daoud Khan from Shikarpur.

Dhote or *Dhati*, like the Kaorwa, a pastoral race of Dhat; their cows give 8 or 10 seers of milk daily.

Kaorwa, a peaceable nomade race, chiefly in the t'hul of Dhat, rear cattle.

Kullora and *Talpur*, Sind tribes, which furnished the last two ruling dynasties. The Kullora claim descent from the Abbasside khalifs, and the Talpuri from Mahomed, but both seem to be Baluch, which are essentially of Jit or Gete origin. The Talpuri (Tal or Tar, Borassus flabelliformis or palmyra, and Pura, a town) amount to one-fourth of the population of Hyderabad, which they call Lohri or Little Sind. There are none in the T'hul.

Lohana, numerous in Dhat and Talpura; they are scribes and shopkeepers.

Jakhur, *'Shiag*, and *Pooniah*, harmless, industrious, in the desert and the valley, are denominations of the Jit race, but most of these sections have became Mahomedans, and call themselves Zj'hut.

Johya, *Dahya*, and *Mangulia*, once Rajputs, are now Mahomedans; are few either in the valley or desert, as also are the Baluch, Bairowi, Khairowi, Jangurea, Oondur, and Baggreah, descended from the Pramar and Sankla Rajputs.

Zj'hut, *Jut*, or *Jit*, dwell in Sind from the sea to Daodputra, but not on the T'hul. They are the oldest of the proselytes to Mahomedanism.

Mair or *Mer*, of Bhatti origin.

Mor or *Mohor*, of Bhatti origin.

Noomri, *Loomri*, or *Looka*, all of which mean fox, a subdivision of the Baluch race.

Oomra and *Soomra* are converts from the Puar or Pramara race; have mixed largely with Mahomedans.

Rajur, a convert from the Bhatti, cultivators, shepherds, and thieves, and evil-livers.

Rebarri, a race who in Hindustan profess Mahomedanism, and rear camels, here were a tribe who rear camels, or, with the Bhatti, stole them.

Sahrai is the most numerous of the Mahomedan tribes of the desert, of which he was the terror. The Khossa is a branch of the Sahrai, whom in habits he resembles, plundering on camels, but they are cowardly and faithless.

The *Soda* is scattered over the desert, some are Mahomedans; the Sumaicha is a Mahomedan proselyte from the Soda.

Sumaicha, converts to Mahomedanism from the Soda race; some are pastoral, some are plunderers. They are dirty and never shave.

Tawuri, *T'hori*, or *Tori*, dwell in the t'huls of Daodputra, Beejnote, Noke and Noakote, and Oodur; they own and hire out camels, but, like the Bawuri and Khengar, are great thieves, and are called 'bhoot,' or evil spirits, and sons of the devil.

Desert of Gobi. The great highway between Pekin and Europe from time immemorial, has been the caravan tract from the western end of the great wall across this desert. The route issues from the western end of the great wall, and, moving through the Kiayu pass, has to traverse N.W. 500 miles of a desolate sand tract to reach the city of Khamil. At this town the road bifurcates, the upper branch leading through Barkul, Urumchi, and Kurkur-usu into Zungaria; the lower through Pijan, Turfan, Karashar, and Kuchu to Aksa in Eastern Turkestan. While Chinese rule prevailed, Zungaria and Eastern Turkestan formed the province of Ili.

Gobi desert in 1860 reached within 6 miles of the town of Ilchi on the N.E., but its shifting sands move along in vast billows, overpowering everything. Mr. Johnson was told that on one occasion, in the space of 24 hours, 360 towns were buried. Ilchi and Yarkand are said to have been founded after this event. Near Ilchi, the edge of this desert has the appearance of a low range of broken hills, and consists of hillocks of moving sand, varying in height from 200 to 400 feet.

The belief that wildernesses are haunted places, is a very old and general one. Jesus himself, in a very solemn passage (Luke xi. 24), adopts the Jewish phraseology as to this belief. Pliny says (vii. 2) that in the deserts of Africa phantoms in human shape appear to travellers, and immediately vanish again. But the belief is especially prevalent among the nations of Central Asia. By them deserts are held to be the especial headquarters and rendezvous of malignant spirits; hence the wilderness of Turan, and particularly the great sand waste of Gobi, have from hoar antiquity had an evil fame. The Turks have a saying that evil spirits play at ball in desert places. Both Fa Hian and Marco Polo allude to the evil genii of the deserts of Central Asia, and Rubruquis tells of a frightful defile, where the demons were said to snatch travellers off their horses. The Afghans believe each of the nume-

rous solitudes in the mountains and deserts of their country to be inhabited by a lonely demon, whom they call the Ghol-i-Biaban, or spirit of the waste, a gigantic and frightful spectre, which devours passengers.—*Schmidt*, p. 352; *Yule's Cathay*, i. p. 157; *Tod's Rajasthan*, i. p. 19, ii. pp. 196, 202, 211, 289; *Mignan's Travels*, p. 32; *MacGregor, Khorasan; Mr. Johnson, R. Geog. Soc. Jr.* 1867; *Sir Bartle Frere on the Runn of Cutch; Pottinger's Travels; G. Rawlinson*, i. p. 1; *Major R. D. Upton*, p. 165.

DESHASTH. Mahr. A native country. Deshasthulu, natives. Deshasth is a term by which the Brahmans of Maharashtra are designated. They are described as a class of sedentary habits, extremely fond of their native place, very fond of display, and fond of rich and splendid clothes. On occasions of marriage and other festival ceremonies, they are lavish. Deshastha Brahmans have acquired some literary celebrity, and have been largely employed under the several governments of India, chiefly in the revenue departments. The few Prakrit poets that have made their appearance are Deshasth, such as Wamon, Moropant, and Jagnath. Deshasth Brahmens are better-featured than the Konkanasths, but the Konkanasth Brahman is fairer.

The social and political life of the Konkanasth Brahmans has undergone a complete change since the beginning of the 18th century. Before that they were solely an agricultural class of people, visiting towns only on very unavoidable occasions. They possessed a good knowledge of the Vedas and Shastras, and were liberally rewarded on that account by the patrons of those branches of learning. They rarely held offices under Government, or in mercantile houses; on the advent of the British, they were compelled to look out for employment, and they at once spread all over the extensive table-land of Syhadri, called the Desh. Every department of Government contains Konkanasth Brahmans, and they have shown themselves active, intelligent, liberal-minded men. The Deshastha from time out of mind have been in the possession of the rich table-land, and been Zamindars, Deshmukhs, Deshpandies, etc. They have never been distinguished for their knowledge of the Vedas or the Shastras. Once they were in sole possession of Government offices, but they have been greatly thrown into the background by the Konkanasth. All the lower class of offices, such as village accountants, etc., are, however, still in their hands.

DESI, indigenous, belonging to the country. Par-desi, a foreigner, a stranger, a native of Northern India.—*Elliot; Wilson.*

DESIDERI. Père Desideri, a missionary, started from Goa in November 1713, and, passing through Dehli and Kashmir into Baltistan, arrived at Leh or Ladakh on the 25th June 1714, and remained there for an entire year. From thence he continued his journey, in the autumn of 1715, to Lhassa, by a route of extreme elevation and great cold, which occupied from August 1715 to March 1716. Desideri found the temporal sovereignty of Lhassa in the hands of a Tartar prince (a Si Fan), who had recently conquered the country. —*Prinsep's Tibet*, p. 15.

DESIMA, the commercial site long occupied by the Dutch in Japan. It stands upon, and wholly covers, a little artificial fan-shaped islet, about 600 feet in length by 240 in breadth, and is joined to the island and town of Nagasaki by a small stone bridge, at the end of which was a strong Japanese guard-house. —*MacFarlane's Japan*, p. 54.

DES-KULKURNI, under the Mahratta government, a revenue officer.

DESMANTHUS NATANS. *Willde.*

Pani najak, . . Beng. | Sunday kiray, . . Tam.

This sensitive plant, with reddish flowers, floats in the tanks of India. Spongy bodies, formed between the joints, act as floats. When the water leaves it, it soon perishes. The leaflets and pods are eaten by the natives.—*Jaffrey; Voigt; Thwaites.*

DESMODIUM, a genus of small trees and bushes of the natural order Fabaceæ. Voigt enumerates twenty-eight species in India. The bark of D. argenteum is steeped in water and made into ropes, which, when as thick as the wrist, bore a heavy strain where English rope snapped. The bark of D. tiliæfolia is also made into rope, and its leaves are the shal-purni of the Panjab bazar. Dr. Cleghorn says the Desmodium paper shrub is exceedingly plentiful in the districts of Chota and Bara Banghal, and in the Ravi valley; the plant having a wider range, and the bark being more easily stripped off, the fibre would be available in the plains at less cost than that of Daphne papyracea.—*Drs. J. L. Stewart, Panjab Pl.; Voigt, Riddell, Cleghorn, Panjab Report.*

DESMODIUM ARGENTEUM. *Wall.*

Sambar, . . . Chenab. | Muss, Chiti of . Sutlej.
Pri, ... Ravi. | Martan, Mort, . „

A shrub of some size, which is found on several of the rivers, where the climate is somewhat dry, at from 3500 to 9000 feet. In Kanawar its bark is used for ropes, after steeping in water. These are not lasting, but very strong; and on the Hindustan and Tibet road, when plaited as thick as the wrist, were found to stand under a heavy temporary strain when English rope snapped. Cleghorn states that in Kanawar the bark is used for making paper.—*J. L. Stewart, M.D.*

DESMODIUM GYRANS, *D. C.*; Hedysarum gyrans, *Linn.* This small plant has pale yellow flowers, tinged with blue; its leaf is composed of three parts, a large broad leaf, having at its base two straight leaves. And during the entire lifetime of the plant, night and day, in drought or in humidity, exposed to the sun or in darkness, these small leaves make unceasingly little droopings, somewhat resembling the movements of the second hand of a watch. One of the two rises, and at the same time its twin leaf falls to a like amount. When the first descends the second remounts, and so on. These movements are more or less rapid in proportion to the heat and moisture of the weather. In India, these have been counted up to sixty regular falls in a minute. The large leaf makes similar movements, but less marked.

DESMODIUM TILIÆFOLIUM *Don.*

Kathi, ... Bras. | Chamkat, . . Jhelum.
Gurkats, . . . Chen. | Marara, . . . Kangra.
Dud shambar, . „ | Kalanchi, . . . Panj.
Gur shagal, . . „ | Pirhi, Pri, . . . Ravi.
Chamgar, Chamra, Jhel. | Laber, Kali-mort, Sutlej.

This large, pretty flowering shrub grows near all the Panjab rivers at 2800 to 8000 feet of elevation. It is browsed by cattle; the twigs are

used for tying loads; and its tough bark is recommended for papermaking. Its lilac-coloured flowers grow in clusters.

DESMODIUM TRIFLORUM. *De Candolle.*

D. heterophyllum, *D.C.* | H. stipulaceum, *Burm.*
Hedysarum trifl., *L.*, *Willd.* | Æschynomene trifl., *Poir.*
Kudalia, . BENG., HIND. | Munudna-muddu, . TEL.

Grows in Bengal and Peninsular India in several varieties. The fresh plant is applied to indolent sores.—*Drury; F. v. Mueller.*

DESMOSTEMON ZEYLANICUS. *Thw.* Wal-kakunu-gaha of the Singhalese. Central province of Ceylon, up to 4000 feet. Timber used for ordinary work.—*Wright; Fergusson.*

DESMUKH or Deshmukh, a hereditary native officer under the Mahratta governments, exercising chief police and revenue authority over a district. In the Akola district of Berar there are many Mahomedan Deshmukhs, descendants of Mahratta and Brahman converts.

DESPANDYA, the hereditary revenue accountant of a district.

DESWAL, a tribe of Taga, in villages of Bhagpur.

DESWALA. HIND. Applied by Mahrattas to a native of the N.W. Provinces.

DESYADES. PANJ. Land beyond the influence of inundation.

DETERGENTS. The Hindu and Mahomedan natives of India employ the following vegetable substances as detergents in the place of soaps:—Elupa kottai, kullee munnoo, kuppu munjal, kusthoori munjal, mara kalam pattai, nalla yennai, patchi pairu, ponnung kattai, sikai, sikaranthool, vellum cumboo.

DETICUS, *sp.*, insects of the grasshopper tribe; they are kept by the Chinese in cages, for combating. They live for months in captivity.—*G. Bennett*, p. 271.

DEUTZIA STAMINEA.

Phul kanri . of HAZARA. | Sai of CHAMBA.
Phurili . . of KASHMIR. | Aruchi, Deus, of BUSHAHR.

A small-sized Panjab wood, white and close-grained. The Deutzia genus is of the natural order Philadelphaceæ. The leaves of D. scabra of Japan are so rough, that they are used for joiners' work.—*Powell.*

DEVA, a deity; Devi, a goddess. The term is Sanskrit, and from the root Div, to shine, or Diu, the sky, the air, and is written and pronounced Deo, Deb, Dewa. Deva is cognate with the Latin Deus, Greek Ζεύς, Lithuanian Diewas, modern Persian and Hindi Deo,—Dewal (deo and alaya) being the house of God. Maha-deva, a title given to Siva by the Saiva sect, means great or supreme god, as Maha-devi, his wife,—title of Bhavani or Parvati,—means the supreme goddess. Deva, however, may equally, by the Vaishnava, be Vishnu. The word may also denote an idol, a man of high rank or sovereign, or a Brahman, or as a cognomen suited to Brahmans, as Chandra-deb. Amongst the compounds of this word are Dewal or Deval, a Hindu temple, from Deva-alaya, a house of God; Deva-sena, from Deva, a god, and Sena, a soldier; Deva-jani, from Deva, a god, and Jaya, a wife; Devarshi, from Deva, a god, and Rishi, a sage. The Devata are subordinate deities in Hindu mythology; divine beings, celestials. They are not superior deities, nor are they deified mortals. The Devata people Swarga, the paradise of Indra, but are found also in Kailasa, that of Vishnu. When the Western Aryans broke off from their brethren the East Aryans and rejected the worship of their gods, the word Deva, which they specially applied to them, came to have a meaning equivalent to fiend, devil. The last term comes from the Greek, Latin, Italian, French.

Amongst the Hindus, there are three kinds of Devata, or deities to whom worship is given,—the Gramadevata, or village god; the Kula Devata, the race or household or family god; and the Ishta Devata, the patron or personal deity of individuals. Adhi-devata is a primitive deity, Sthana Devata is a local deity. The Aryan Hindu does not recognise the village gods of S. India, but the non-Hindu Turanian races largely worship them; and even many of those Turanian races who have been converted to Hinduism worship them. They are mostly shapeless pieces of wood or stone smeared with vermilion, and mostly represent evil spirits or devils. These are the Amma, Ammun, and Amŭr of the eastern and southern parts of the Peninsula, and the Satwai, Bhairo, Massoba, Chamanda, Asra, Ai, and Marri-ai of the northern and western parts of the Peninsula, all of whom are recognised as causing harm to individuals. In health they are neglected; but when sickness occurs, either to individuals or as an epidemic, these spirits of evil are worshipped with much solemnity, and bloody sacrifices are made to them of goats and sheep and bullocks and buffaloes.

DEVA-DARA. HIND. Cedrus deodara, *Loud.*; Erythroxylon areolatum? Devadaram, TAM., is Sethia Indica, *D.C.*; and Guatteria longifolia, *Wall.*

DEVA-DARSANA. SANSK. In the south of India, a visit to an idol by a bride and bridegroom, with their friends, at a particular period after marriage.

DEVA-DASA. SANSK.

Hierodulæ of BABYLON. | Murali, ... MAHR.
Dancing girls, . . ENG. | Balladeiras, . . PORT.
Temple ,, . . ,, | Basava, ... TEL.
Bayadere, . . . FR. | Jogin, Bhavin, . . ,,

To the temples of Venus in Western Asia, and in later times in Greece, large bodies of hierodulæ were attached, who were at once prostitutes and ministers to the goddess. The daughters of the most illustrious families in Armenia passed from the service of the goddess Anaitis into matrimony with those of equal rank, and no stain adhered to them from their former mode of life. We find traces of the same usage in the distant settlements of the Phœnicians on Mount Eryx, and at Sicca Venerea in the Carthaginian territory. In Babylon, no woman, of whatever rank, could escape the obligation of once prostituting herself in the temple of Mylitta. This debt once acquitted, as the necessary preliminary to marriage, they were ever afterwards faithful to its obligations, with whatever price they might be tempted. In Hindu mythology, the Deva-dasa are the courtesans of Swarga, the heaven of Siva. The earthly Deva-dasa women, or dancing girls in attendance at the temples of the Hindu deities, by their name of Deva-dasa call themselves the servants or slaves of the god. Exodus xxxii. 19 tells us of the Israelites dancing in the presence of the idol which Aaron had made for them in the form of a calf, doubtless the Nandi bull, the vahan of Siva of the Hindus of to-day, and dancing before the

Hindu idols is a daily rite, and takes place at every Hindu festival.

The temple women of the Hindus originally appear to have been intended for the gratification of the Brahmans only, but they were, in some parts of India, obliged to yield to all who solicited them, though consecrated in a special manner to the worship of the Hindu gods. Every temple, according to its size, entertains a band of them, to the number of eight, twelve, or more. The service they perform consists of dancing and singing. The first they execute with grace, though with lascivious attitudes and motions. Their chanting is generally confined to the obscene songs which relate to some circumstance or other of the licentious lives of their gods. They perform their religious duties at the temple to which they belong twice a day, morning and evening. They are also obliged to assist at all the public ceremonies, which they enliven with their dance and song. They are reared to this life from their infancy. They are taken from any caste, and are not unfrequently of respectable birth. It is nothing uncommon to hear of pregnant women, in the belief that it will tend to their happy delivery, making a vow, with the consent of their husband, to devote the child then in the womb, if it should turn out a girl, to the service of the pagoda. And in doing so they imagine they are performing a meritorious duty. The life to which the daughter is destined brings no disgrace on the family. Until towards the middle of the 19th century, these women were the only Hindu females in India who might learn to read, to sing, and to dance. Such accomplishments belonged to them exclusively, and were for that reason held by the rest of the sex in such abhorrence, that every virtuous woman would have considered the mention of them as an affront. That feeling has now greatly changed. They are now very generally kept by the wealthier Hindu men. In some of the Hindu temples they are numerous. The temple of Kamakhya or Kamichcha is sacred to Durga, the Sakti of Siva. It is built on a hill rising about 700 feet from the river Brahmaputra, just below Gowhatty. It is said that in former times there were 5000 young girls attached to the temple. In 1872 there were still some hundreds there. In an inscription on a slab in the Bengal Asiatic Society's Museum, of date Samvat 32 of the Gaur era, about A.D. 1174, mention is made of Bhava Deva giving 100 damsels to a temple.

The eldest daughter of every family of the weaver caste, at the small town of Tiru-kalli-kundram in the Chingleput collectorate of the Madras Presidency, is devoted to the temple. She is sent to the pagoda before the age of puberty, where dancing and music masters are provided. The Murli girls of the Mahratta country correspond to the Basava of the Teling race. The Basava women are usually devoted to the god Siva, and become prostitutes. They are called the Linga or Garuda Basava, according as they are devoted to one or other deity. They are called also Jogin, and they are married sometimes to a dagger, sometimes to an idol. In making female children over to the service of a temple, a girl, generally a infant, is taken and dedicated for life to the service of some idol by a ceremony called Shej. A khanjar or dagger is put on the ground, and the girl who is to undergo the ceremony puts a garland on the knife. Her mother then puts rice on the girl's forehead. The officiating Bhutt then weds the girl to the dagger, just as if he were uniting her to a boy in marriage, by reciting the Mangalasalok, or marriage stanzas, a curtain being held between the girl and the dagger. The girl thus becomes a Bhavin, dedicated to the service of the temple. In many parts of the south of India, the non-Aryan races thus devote their young women, in order that they may follow prostitution openly, under the cloak of a religious rite. It is not easy to trace the origin of this custom; but at the Mylitta festivals, which were connected with the worship of Baal or Moloch, the women, as slaves to the goddess, were obliged to purchase exemption from being sacrificed by prostitution. Almost all the Jewish prophets down to Jeremiah complain that this service was carried on in the high places by the Jews. In general, throughout the Dekhan southwards to Cape Comorin, devoting a female child to the gods for the purpose of being common, as a Murli, Basava, Bhavin, or Jogin, is deemed disreputable. But the Deva-dasa or temple servants are in a recognised office, and are obtained from Hindu races whose custom it has been for ages; or by Hindus vowing, in sickness or other affliction, to give one of their daughters to some particular temple, and the vow is scrupulously kept at the proper time; or by adoption. In the selection of girls for adoption in this profession, good-looking, well-made girls are chosen, and they are taught to dance at the early age of five. Older girls, when they adopt the profession, are also taught to dance. The lessons in dancing are given daily, two hours before daylight in the morning, one of which is devoted to singing and the other to dancing. In the evening, after 4 P.M., the same number of hours are devoted, so that each girl has to practise for four hours daily, and in about three years she is supposed to have mastered the arts of singing and dancing. In Southern India there are reckoned six chief kinds of dancing:—1. Audo girathoo; 2. Ananccum; 3. Lenchence nateum; 4. Moodciydoo cirathoo; 5. Hereacoothoo; 6. Colu auteum. And the art of dancing, or Abimayam, is said to be exhibited in six different ways during these performances,—1. By the movements of the eyes, and 2. action of the features, and 3. attitude of the breast and chest, and 4. position of the hands, and 5. action of the feet, and 6. by calisthenic performances. By commencing their studies at the early age of five, these girls are able to make their appearance at about seven or eight years of age, very rarely earlier than that, and they continue dancing till thirty or forty years of age. When attached to pagodas, they receive certain sums as wages, the amount of which is dependent on the wealth, sanctity, and popularity of the particular temple which they have joined. The money salary they receive is nominal, seldom exceeding a few annas, and sometimes a rupee or two a month. The chief object in being paid this sum as a salary, is to indicate that they are servants of the temple; in addition to this, one or more of them receive a meal a day, consisting merely of a mass of boiled rice rolled into a ball. They are required to dance six times a day at the temple before the deity, while the priests are officiating, but this duty is performed by turns. Dancing girls attached to pagodas are generally wealthy, and when they appear before

the public are well covered with the usual gold ornaments; if poor, tinsel is used, or golden ones are borrowed from others. Their heads, ears, nose, neck, arms, wrists, fingers, ankles, and toes are overdecked with jewels, and their hair frequently has flowers. The hair is divided in front along the centre, combed back, and plaited into a single plait, falling loose on the back like a tail, averaging from two to two and a half feet in length, and always ornamented with jewels and flowers. Their dancing dress comprises usually the short bodice or choli, a pair of ravake or string drawers tied at the waist, termed paijama or pavadai (both these are generally of silk), and a white or coloured muslin wrapper or saree. One end of the saree is wound round the waist, and two, three, or more feet, according to the length, is gathered and tucked into the portion encircling the waist, and permitting of a folding fringe or gathering of the cloth in front; while the other end, taken after the usual native fashion over the left shoulder, falls towards the waist, where the end or munthani is opened out and allowed to drop in front, one end of it being tucked into the waist on the side and the other left free. This portion of the saree is usually highly ornamented with golden thread, tinsel, etc. The free end descends to the middle or lower part of the thighs; the other free end of the saree hanging down towards the legs is now caught hold of, passed between the legs, and fastened to the tie around the waist at the back, and the whole encircled by a gold or silver waist-belt. By this mode of dress a fold of the muslin saree forms a loop round each leg, and descends nearly down to the ankles, whilst the gathering hangs in the front between the legs free. At home they wear the choli and saree, with a petticoat or pavadai; this, in fact, is their usual dress, except when about performing they exchange the pavadai for the paijama or sharai. The pavadai is made of chintz or silk, according to the means of the individual. A string of small brass bells, known by the name of shullungay or jedjum, is tied around each leg immediately beneath the ankles.

The dancing girl caste have peculiar laws for adoption and inheritance. A dancing girl can adopt a daughter, with the permission of the authorities of the pagoda to which she belongs; but she cannot adopt a son for the transmission of property, it being immaterial whether she have a son or not. The adopted girl cannot share her mother's property during her lifetime; and although she may be the heiress, she is not bound by the laws of caste to support her brother's widow. Among dancing girls property descends in the female line first, and then to males as in other castes. In the failure of issue, the property of a dancing girl goes to the pagoda to which she belongs. A simple recognition on the part of a dancing girl of a child as her daughter, in the presence of one or more individuals, is sufficient to constitute her claim to adoption.

Dancing girls are respected by the several castes or sects of Hindus, and are allowed to sit in the assembly of the most respectable men, such honour not being accorded to their own wives and daughters. As a rule, it is seldom that these women have children of their own, unless, perhaps, they had lived in continual concubinage with some single individual; consequently they are always anxious to adopt girls, not only to become their successors in the temple, but that they may inherit their property likewise. Formerly a large trade was carried on by kidnapping good-looking girls from large towns and remote villages, who were sold to these women. Famines in Ganjam, Orissa, and Bengal were taken advantage of, not only by abandoned characters, but also by immoral native princes, for the basest purposes. During a criminal session in Calcutta, two women were sentenced to seven years' imprisonment each, for having purchased a girl under sixteen years of age, for one rupee ten annas. In some places there are said to exist two kinds of dancing girls,—the dancing women differing from the pagoda dancers. The latter are said to live in concubinage as a rule. They are a privileged class under the Aylah Santanam, or descent by the daughter's children, or in the female line, and the law of Dhya applies to them; Dhiya Baga, or division by favour, Merasi heritage of right to official emoluments, operates as an inducement. These classes are recognised as Dasi and Deva Dasi. The Dasi dancing women belong for the most part to itinerant bands, and are frequently made up of women of low caste, who practise their professional accomplishments and prefer living in concubinage. The Siva temple of the Soournamookie (Kalastry), a zamindari in the North Arcot district, maintains a large establishment of what is termed Deva Dasi or pagoda dancers, forming a distinct community there (Audapapalu), who live exclusively in concubinage. Their sons, who know no father, pass by the appellation of Nagari Kumarada, or sons of the country, and are slaves to the zamindar. Of the daughters, after supplying the vacancies in the pagoda staff, the remainder are brought in the list of drudges of the palace. The dancing-master or teacher receives from fifty to five hundred rupees, with other presents, for teaching a girl the usual dances. This generally forms a contract which is greatly dependent on the wealth and position of the parties.

Dancing girls, when performing, are accompanied by two men singers, termed Nuthuvan and Padowen, who, while singing, also play the cymbals; these instruments are of two kinds and sizes. While the cymbal is played with the right hand, the left hand, open, is generally applied to the left ear while they sing, bowing their bodies forward as well as from side to side, contorting their faces in like manner, and making grimaces. In singing they scream as loud as their voice and lungs will admit; one or more old women join in the song, and frequently clap their hands during the performance; they are generally dancing girls who have given up the profession from age or other causes. Some of the girls are very good-looking, handsome, with open countenances, large sparkling eyes, regular features, and intelligent pleasing appearance. They are perfectly self-possessed in manner, verging on assurance, staring at one with their large, intelligent-looking eyes. Notwithstanding, they possess a vast deal of courtesy and polish, tempered with languid grace and serene self-possession, whilst their manners are courteous and their bearing unembarrassed, possessing all the teaching which experience of the worst side of human nature gives, and they know but one form of pleasure, the degrading manner in which

their lives are spent. The majority possess some natural gifts. As to conversational powers, they seldom possess any beyond the usual laugh and giggle, and monosyllabic replies given to commonplace questions. Some of the Telugu girls are very handsome, of a light pale colour, somewhat yellowish in tinge, with softness of face and feature, a gentleness of manner, with a peculiar grace and ease, which one would little expect to find among them. A ladylike manner, modesty and gentleness, such beautiful small hands and little taper fingers, the ankles so neatly turned, as to meet the admiration of the greatest connoisseur. They can generally read and write their own language, and pretty correctly—some two languages. One girl at Conjeveram wrote three; the third was English, in which she wrote her name in a fair round hand, and spoke the language with some fluency; Tamil and Telugu were the other two languages, which she wrote tolerably well. She was said to have received her education in a mission school at Madras, but did not appear ashamed of her profession. She was doubtless a girl who had been devoted to the temple in her infancy. A similar case of a mission-taught girl occurred in Mysore about 1870. Their songs generally comprise praises in honour of their several idols, filled with repetitions and unmeaning expletives. These songs are often vulgar and lewd, and sung before assemblies of men, and before the deities, but they time the quality of their songs to suit the place and audience before which they have to appear. Nautches are given on all occasions of marriage ceremonies, feasts, and other public occasions. Among rajas, zamindars, and others, they are almost things of daily occurrence. A few of these girls can play the native guitar or violin tolerably well, and some of their songs have a mournful and melancholy tune; the harsh grating of the songs of the attendants, and the rattling of the wind instruments and tom-toms, are, however, disliked by European ears, though they charm the natives. When their services are demanded outside the temple, larger sums of money have to be paid for them, the charge being increased according to the renown and position of the girl, as some few will not give their services to any one unless a raja or some person of rank. Some travel to other districts when their services are needed by petty rajas or zamindars, and they are contracted for as many days as they have to perform, in addition to being well paid. They frequently receive valuable presents, in money, shawls, gold bangles or rings, which are bestowed on them during the performance. Every village of importance has a temple with a few of these women attached to it, and in some of the large towns, possessing temples of repute for sanctity, these are filled with them. It is perhaps one of the worst institutions connected with Hinduism, from the recognition and support it receives from all classes of idol-worshipping devotees, the women being the victims of such a system, recognised and patronised in every part of India where Hinduism predominates. These poor creatures being taught to read and write their own and other languages, with a view to be better able to master the lewd immoral songs; whilst their own wives, the mothers of their children, are deprived of learning of any kind, and are carefully shut out from society, not even allowed to appear in public before any assembly of men, and are allowed, further, to grow up in the greatest ignorance and superstition. To some extent female education and enlightenment are now penetrating the masses, and the natives themselves are seeking enlightenment and intelligence, from which their own mothers, wives, and daughters have hitherto been secluded.—*Dr. Shortt, the Anthropological Society of London Jour.* iii., 1867-68.

DEVADAT, brother-in-law of Sakya. He raised a schism against the teaching of Sakya, whom he attempted to kill, but, according to the Buddhist legend regarding him, the earth opened and destroyed him and all his followers, and as he fell down into hell he was transfixed with three perpendicular hot irons, whilst three others pierced his shoulders transversely. The Burmese consider that Devadat was Jesus Christ, and the Siamese think that Devadat is the God of Europe.

DEVA-DATA or Deo-dat, a Hindu man's name, literally god-given—Theodotus.

DEVA-DEVI, an island in Bombay harbour, known to sailors as Butcher Island. The native name, properly Deva-dwipa, means the Island of the gods, or Holy Island.

DEVADIGAR. KARN. A low-caste menial in the temples of the south of India.—*Wils.*

DEVAKI, sister or cousin to Kansa, king of Mathura, and the wife of Vasudeva. Krishna was their eighth child.

DEVAL. HIND. A Hindu temple, a Christian church.

DEVALA, MAHR., also Devalana, KARN., a Brahman of an inferior order, who attends upon idols, and lives upon the offerings made to them. Devalaya, from Deva, a god, and Alaya, a house, a temple; the house of God. The same term is applied to an oath taken in a temple.

DEVALA. Several Sanskrit writers had this title. One was author of a code of law, one an astronomer, one was grandfather of Panini, and one a Hindu mendicant who resided at Hurdwar, and was one of the Smriti writers.—*Ward*, iv. p. 28.

DEVALA. HIND. An ordeal. See Divination.

DEVA-LOKA. SANSK. The habitations of the Deva. In Hinduism there are six celestial worlds between the earth and the Brahma-loka.—*Hardy's Eastern Monachism*, p. 435.

DEVA-NAGARI, an alphabet in use in India. It was introduced into Tibet from Kashmir in the first half of the 7th century of the Christian era. Deva-Nagari is the ancient alphabet of India, inscriptional, in capitals, and is a modification of the inscriptional and monitary Pali. The alphabets of the various languages allied to the Hindi are modifications of the Deva-Nagari alphabet. It is the character in which Sanskrit is usually written. Mr. Wathen, like Mr. Prinsep, refers the modern Deva-Nagari, through various changes which he shows in inscriptions of different ages, to the Old Pali lat or column character.

DEVANG. KARN. A Lingaet, one who carries the emblem of Siva on his person.

DEV-ANGA or Devanaga. TEL. Devangada, KARN. The title assumed by the caste of weavers in the Karnatica.

DEVANGANA, amongst Hindus, the celestial minstrels who perform before Mahadeva. They are also called Gandharva, also Apsaras. Their instruments are the tambourine, cymbals, castanets, lute, and violin.

DEVANHALLI, a small town in Mysore, 23 miles from Bangalore. It was formerly the seat of a family of Polygars, who traced their descent from one of the refugees of the Morasa Wakkala tribe, who founded petty dynasties throughout Mysore in the 14th century. The last of the Gauda, as the chiefs were called, was overthrown in 1748 by the Hindu raja of Mysore. It was in the siege of Devanhalli, on this occasion, that Hyder Ali first gained distinction as a volunteer horseman, and it was here that his son Tipu was born. Hyder erected a fort of stone, which was captured by Lord Cornwallis in 1791.—*Imp. Gaz.*

DEVA PAL DEVA. From a copper tablet discovered at Monghir, Raja Deva Pal Deva appears to have reigned in the 9th century as far as the Karnatic and Tibet.?

DEVARAM, a famous Saiva poem, part of the so-called Tamil Veda.

DEVASTHALA. Sansk. A temple of the Hindus, any sacred place.

DEVASTHANAM, the superintendence of Hindu temples, conducted by trustees called Dharma Karta.

DEVATA, from Deva, a divinity, a spirit, a demigod. The Devata are benign spirits, governed by Indra, properly the inhabitants of the North Pole, for the Devata are said to have day when the Daitya have the night, and *vice versâ*. Amongst the Hindus there are several kinds of Devata or deities to whom worship is given,—the Gramma-devata or village god; the Kula-devata, the race, household, or family god; and the Ishta-devata, the patron or personal deity of individuals; Adi-devata is the primitive deity; Sthana-devata, local deity. The Aryan Hindu does not recognise the village gods of Southern India, but the non-Hindu Turanian races largely worship them; and even many of those Turanian races who have been converted to Hinduism, worship them. They are mostly shapeless pieces of wood or stone smeared with vermilion, and usually represent evil spirits or devils. These are the Amma, Amman, and Amur of the eastern and southern parts of the Peninsula, and the Satwai, Bhairo, Massoba, Chamanda, Asra, Ai, and Marryai of the northern and western parts of the Peninsula, all of whom are recognised as causing harm to individuals. In health they are neglected; but when sickness occurs, either to individuals, or as an epidemic, these spirits of evil are worshipped with much solemnity, and bloody sacrifices are made to them of goats and sheep, and bullocks and buffaloes. Gotra or Kula mean a family, and is used amongst Kshatriya and Vaisyas as well as Brahmans. The Gotra depend on a real or imaginary community of blood, and then correspond to what we call families. No Hindu house is supposed to be without its tutelary divinity, but the notion attached to this character is now very far from precise. The deity who is the object of hereditary or family worship, the Kula-devata, is always Siva, or Vishnu, or Durga, or other principal personage of the Hindu mythology; but the Griha-devata or household god rarely bears any distinct appellation. In Bengal, the domestic god is sometimes the Saligram, sometimes the tulasi plant, sometimes a basket with a little rice in it, and sometimes a water jar, to any of which a brief adoration is daily addressed, most usually by the females of the family. Occasionally small images of Lakshmi or Chandi fulfil the office, or, should a snake appear, it is worshipped as the guardian of the dwelling. In general, in former times, the household deities were regarded as the unseen spirits of ill, the ghosts and goblins who hovered about every spot, and claimed some particular sites as their own. At the close of all ceremonies, offerings were made to them in the open air, to keep them in good humour, by scattering a little rice, with a short formula. Thus, at the end of the daily ceremony, the householder is enjoined by Menu (3.90) 'to throw up his oblation (bali) in the open air to all the gods, to those who walk by day, and those who walk by night.' In this light the household god corresponds better with the *genii locorum* than with the Lares or Penates of antiquity.—*Wilson's Hindu Theatre; Warren, Kala Sanhita.*

DEVA-TOTTHA-PANA. Sansk. Dismissing or releasing the deities who have been invited to a ceremony, at its conclusion.

DEVAYANAI or Devasena, one of Subhramanya's wives.

DEVENDRA, the king of the Deva.

DEVER, the tribal designation of the Maravar race in Ramnad, Madura, Shivaganga, and Tinnevelly. It seems identical with the Telugu Dewara or Devera, a respectful mode of address to a superior.

DEVI. Sansk. A goddess, the feminine of Deva, a god. It is one of the titles of the Hindu goddess Durga, also known as Kali, and when used alone is understood to designate Parvati, the sakti or wife of Siva. Devi, as Durga, in the south of India is represented in paintings as a beautiful woman riding on a tiger, but in a fierce and menacing attitude, as if advancing to the destruction of one of the giants, against whom her incarnations were assumed. Devi, as Kali, in another form, an especial favourite in Bengal, is represented with a black skin, and a hideous and terrible countenance streaming with blood, encircled with snakes, hung round with skulls and human heads, and in all respects resembling a fury rather than a goddess. Her rites in those countries correspond with this character. Goats and sheep and other animals, and even human beings, are offered in sacrifice. See Chandra; Dasahara or Dashara; Kali; Kerari; Linga; Lustral Ceremonies; Mahadeva; Mahadevi; Parvati; Sacrifice, Satarupa; Serpent, Vishnu; Yavana.

DEVICOTTAH, a fortress on a small island at the mouth of the Colerun, in lat. 11° 22′ N. Devicottah frequently changed hands during the contests between the British and French in the 18th century.

DEVIL BIRD of Ceylon has its ordinary cry like that of a hen just caught. Its screams are like those of a youth in agony. It is said to be an owl, the Syrnium Indrani, also a species of Gualama. Mr. Mitford supposed it to be a goat-sucker, a cuckoo, or a blackbird.

DEVIL GOAD.

Croton oblongifolium, *R.* iii. p. 685.

Bhatamkusam, . Sansk. | Bhutala bhairi, . Tel.

The Telugu name signifies 'demon driver' or 'devil goad,' and sticks made of this tree are carried as a protection against evil spirits.

DEVILS and Devil-dancers. The ordinary

word in use in the Tamil country to designate a devil is Paisacha or Pisacha, and the temple raised to a Paisacha is a Pekoil; but the former seems rather to be an evil spirit, and the latter a temple to an evil spirit. All the Aryan and non-Aryan Hindu and Buddhist races of India, and all the races in the Malaya and the Eastern Archipelagoes recognise the existence of spirits both good and bad; and the whole series of the funeral ceremonies from the date of the demise of a Hindu until the demise of his son, are instituted from the belief that the spirit of the deceased is present and can accept oblations; and there are even instances where contracts have been entered into or renewed with the spirit of a deceased owner. The Hindus have a hell, Narakam, and a devil, but the spirits of the non-Aryan races seem to refer to evil spirits. In their belief, if any good man die, his spirit may occupy a tree or stone or other locality, and be an evil spirit; may even take possession of one of his votaries, in which event the screaming and gesticulating of the possessed person are attributed to the spirit in possession, and in the Urdu tongue the phrase would be, 'Saya, uska ang bhara,' the shade has filled his body; and the possessed person prophesies. In their belief, every malady may be the infliction of an evil spirit. To dispossess the spirit, wild music and dancing are had recourse to, and the possessed, generally a woman, exhausted by her Pythonizing, falls down utterly exhausted, is seized with violent hysteria, or goes into convulsions. The non-Aryan races are constantly recognising new spirits from amongst deceased natives of India or Europeans, particularly from amongst those whom death or accident have suddenly cut off, and they have also introduced the deities of the Hindus as demons; but the Amman or earth-deity is in every village throughout S. India, and the worship of all the demon gods is by blood-sacrifices and ardent spirits. Amongst the Shanar race in the south of the Peninsula of India, the belief is that sometimes demons are content with frightening the timid without doing any real harm. Failures in trade or in crops are attributed to demons. People hear a strange noise at night, and immediately they see a devil making his escape in the shape of a dog as large as a hyæna, or a cat with eyes like two lamps. In the dusk of the evening devils have been observed in a burial or burning ground, assuming various shapes, one after another, as often as the eye of the observer is turned away; and they have often been known at night to ride across the country on invisible horses, or glide over marshy lands in the shape of a wandering, flickering light. In all their journeyings they move along without touching the ground, their elevation above the ground being proportioned to their rank and importance. Dr. Caldwell has known a village deserted, and the people afraid even to remove the materials of their houses, in consequence of the terror caused by stones being thrown on their roofs at night by invisible hands. Demons more malicious still have sometimes been known, under cover of the night, to insert combustible materials under the eaves of thatched roofs. Even in the day-time, about the close of the hot season, when the winds fail, demons may often be seen careering along in the shape of a whirlwind, catching up and whisking about in their fierce play every dry stick and leaf that happens to lie in their path. In short, writes Dr. Caldwell, the demons do much evil, but no good. They often cause terror, but never bestow benefits, or evince any affection for their votaries. They must be placated by sacrifice, because they are so mischievous; but there is no use supplicating their favour. If in any case the hope of obtaining a benefit seems to be their votary's motive in worshipping them, further inquiry proves that it is under the supposition that the demon's malignity stands in the way of what would otherwise be obtained as a matter of course. And it may be said to be the object of the worship of all the non-Aryan races, to avert from themselves the evils which the demons could inflict; for gratitude for good received, or resignation to the will of a Supreme, are not parts of the Amman or spirit-worship. A similar superstition respecting goblins and demons exists all over India. Every Hindu work containing allusions to native life, and the dictionaries of all the Hindu dialects, prove the general prevalence of a belief in the existence of malicious mischievous demons, in demoniacal inflictions and possessions, and in the power of exorcisms. The chief peculiarity of the superstition, as it exists amongst the Shanars, consists in their systematic worship of the demons in which all believe. In every part of India, innumerable legends respecting goblins and their malice are current; but scarcely any trace of their worship in the proper sense of the term, much less of their exclusive worship, can be discovered beyond the districts in which Shanars, or other primitive illiterate tribes, are found. In travelling down to Tinnevelly from the north, the first village which is found to be inhabited by Shanars, Virduputty, about thirty miles south of Madura, is the first place where Dr. Caldwell observed systematic devil-worship. In like manner, in Travancore, devil-worship appears to commence with the first appearance of the Shanar race in the neighbourhood of Trivandrum, from whence it becomes more and more prevalent as you approach Cape Comorin. The demon-worship of the Shanars and a few other illiterate tribes is a degradation beneath which the human mind cannot descend. The places in which the demons are worshipped are commonly termed Pe-koil, or devil-temples; some of the temples, especially those erected to the sanguinary forms of Kali, are small, mean, tomb-like buildings, with an image at the further end of the cloister. But the majority of the devil-temples are built neither with stone nor brick; the roof is neither terraced nor tiled, nor even thatched. A heap of earth, raised into a pyramidical shape, and adorned with streaks of whitewash, sometimes alternating with red ochre, constitutes both the temple and the demon's image; and a smaller heap in front of the temple, with a flat surface, forms the altar. In such cases a large conspicuous tree—a tamarind tree, an umbrella tree (Acacia planifrons), or even a palmyra, whose leaves have never been cut or trimmed—will generally be observed in the vicinity. This tree is supposed to be the devil's ordinary dwelling-place, from which he snuffs up the odour of the sacrificial blood, and descends unseen to join in the feast. Turnour mentions that an ordinance of one of the kings of Ceylon commanded that a devil-dancer should be provided for every ten villages.

Buddhists of Ceylon still resort to the incantations of the devil-dancers in case of danger or emergency.

The educated European of the 19th century cannot realize the dread in which the Hindu stands of devils. They haunt his paths from the cradle to the grave. The Tamil proverb in fact says, 'The devil who seizes you in the cradle, goes with you to the funeral pile.' The chief anxiety of the Tamil father, when his child is about to be brought into the world, is to see that the leaves of the margosa tree are carefully fixed over the threshold, to prevent the devils from entering and seizing upon the child at the moment of birth. If he have lost two children before, and this be a son, a bracelet is placed upon the child's arm as a safeguard, a golden ring is fixed in its nose, and it is solemnly dedicated to some particular demon, who is entreated to protect it. The child is then perhaps named Payen (the Devil's Own), a name of frequent occurrence in S. India. The ring is allowed to remain in the nose till the child is grown, a great feast is then made by the parents, and sacrifices of sheep or cocks offered at the shrine of the tutelary demon. The periods of marriage and pregnancy are times at which devils are supposed to be especially malignant, and ceremonies are then performed to avert the influence of the evil eye, ill omens, and devils. In so slight a matter as the boring of a child's ears for ear-rings, it is considered necessary to propitiate Karuppan with the sacrifice of a goat, or a cock at least. A European seeing a crowd assembled under an odiya tree (Odina pinnata), which the massive iron chain hanging from its trunk betokened to be dedicated to Karuppan, rode up, and found there the quivering body of a ram just sacrificed to the demon. The head had been severed from the body by one blow of a large sickle-shaped weapon, which was courteously handed for inspection. It was made, handle as well as blade, of native iron, and had lately been presented to the shrine by a devotee. The sacrificer had made the present offering on the auspicious occasion of an infant son having his ears bored. The head of the ram fell, as usual, to the share of the officiating priest, while the body, slung on a pole, and carried on the shoulders of two men, amid the beating of tom-toms was taken home to furnish the evening feast. No temple was near, but on a pedestal under the tree reposed a hideous object made of potter's ware. This particular demon is supposed to be, when propitiated, very liberal in the bestowal of benefits; and the pujari mentioned to the looker-on that if he would make a sacrifice of a goat or two, he would guarantee that his devil should obtain for him a lucrative appointment under Government! The sacrifice of goats is almost continuous,—sometimes as many as twenty goats are sacrificed at one time. The flesh is generally cut up, cooked, and eaten on the spot; and round the shrines may often be seen a number of small earthen ovens. The strongest oath a Sudra can take is to swear by the most famous devil of the district; and often, before a lawsuit is carried into court, the aggrieved party will say to his opponent, 'I will be satisfied if you will go to such a demon's shrine, and there, on the justice of your cause, blow out the flame of a lamp in the presence of the Kali.' A man who would not hesitate a moment to commit perjury in court, would never dare to perform this ceremony knowing his cause to be unjust, for then he firmly believes that he would immediately be stricken down by the demon. So swears Latinus in the Æneid:

'Tango aras, medios ignes et numina testor.'

Under this ever-present fear of demons, the Hindu often hesitates to go even a hundred yards in the dark. He will not enter a forest alone; he fears to stand on the borders of a lonely lake, for there dwells the spirit which in Scotland is known by the name of the Kelpie, and it is near the water where, he has heard, may be often seen in the darkness of the night the 'fiery-mouthed devil,' ignis-fatuus. But most of all he fears the sandy plain, for it is a notion thoroughly oriental, that the unclean spirit 'walketh through dry places,' which are called in Tamil, Pai Kadu, devil-deserts. Devils are especially said to abound in the sandy wastes between Madura and Tinnevelly, where the mirage (in Tamil, Pai Ter, the devil's chariot), is frequently seen, and is said to be produced by them. When a fire takes place in a village, it is owing to the wrath of the village devil. His worship has been neglected, or some insult has been offered to him, and he thirsts for revenge. Near the village of Vediarpuram, in the Tanjore district, for about four or five years accidental fires had been of annual occurrence, and it was commonly reported to be owing to the anger of Aiyanar, a demon whose shrine is situated to the west of the village. A banyan tree near the spot, dedicated to him, was some years ago felled without his permission, and since that time the enraged demon, refusing to be propitiated by the usual sacrifices, yearly burned down a house or two. Many races besides Hindus are very prone to make vows in times of sickness. Formerly, we are told, people used to go from all parts of England to Canterbury,

'The holy blissful martyr for to seek,
That them hath holpen when that they were sick.'

The Hindu makes a vow to go to a particular shrine, and there pour offerings of oil and spices. If a diseased member have been restored, oftentimes a golden image of it is made and presented to the shrine. A person suffered from a serious affection of the eyes. A vow was made that in case of recovery two golden eyes should be made and presented to the shrine of Mari Amman. In like manner, the Philistines, we read, when afflicted with emerods, thought, after consulting with their soothsayers, that they could best propitiate the God of Israel by making and offering to him golden images of the emerods. As may be expected, the devils are most busy in the

'last scene of all
That ends this strange eventful history;'

and a young girl fears to cross a dying man, lest his latest breath should pass into her, in which case she would be possessed beyond recovery. For a similar reason, a Hindu at the point of death, is always removed to expire without the house, which would otherwise be haunted. As the corpse is carried away, parched rice is scattered along the route of the funeral procession. It is believed that the devils will stop to pick it up, and it is considered advisable to keep them so engaged till next sunrise, for should they return to the house before that time, they would probably not be satisfied without another victim. A native

proverb says, 'A Saturday's corpse goes not alone.' When, therefore, a death takes place on a Saturday, to prevent evil consequences, a live cock is taken with the corpse to the burning ground, and it is there given away to some person of low caste, or, like the scapegoat of old, allowed to escape into the adjacent jungle. Brahmans, averse to bloody sacrifices, substitute for a cock the bolt of the door of the house, which they burn with the corpse. When a dead body is buried, instead of being burnt, as in the case of Suniyasi (ascetic devotees), salt is placed in the grave, and frequently with it the leaves of the margosa tree, so famous as a charm against devils. Salt was till recently also in England placed on the corpse of Roman and Lutheran Christians, for the avowed purpose of keeping it secure from the evil one, and the practice is still said to linger in the Highlands of Scotland. It was seen in 1833, placed over the dead body of a young girl at Greenwich. The Highlanders, indeed, in many of their superstitions are remarkably similar to the Hindus. They formerly planted the rowan or mountain ash, regarding it as a safeguard against devils, just as the Hindus regard the margosa. Throughout India, the belief is as common as it was formerly in Europe, that a man who dies a sudden or a violent death becomes a demon. All the women in the district are immediately possessed by him, and innumerable mischiefs result. A Brahman, accidentally drowned in the river Cauvery, about the year 1870, became in consequence a Brahma Rakshasa, one of the fiercest of demons. An officer of artillery, killed at the battle of Assaye, was buried beneath a tree near the village, and his spirit is worshipped there to the present day. Dr. Caldwell mentions the case of Captain Pole, an English officer who was mortally wounded at the taking of the Travancore lines in A.D. 1809, and has been invoked by the Shanars. His worship consisted in the offering to his manes of spirituous liquors and cheroots. About the middle of the 19th century, a Brahman who was sentenced to be hanged at Madras, for the murder of another Brahman going on pilgrimage from Benares to Rameswaram, threatened that though they were about to hang him, he would not die, but would become a Brahma Rakshasa, and torment all those who had given evidence against him.

Bells and chains are almost always used in devil-worship and exorcism; the notion involved seems less to be that of scaring the devil, than that of charming him, just as a snake-charmer charms a snake by music. Near the fanes of the popular devils there are massive iron chains hanging from the trees, with bells and knives attached to them. In the well-known Sanskrit work, the Hitopadesa, occurs a story relating to a famous devil, called Ghanta-karna or Bell-ear. This Rakshasa was believed to dwell on the top of a mountain near the town of Brahmapura. One day a thief, having stolen a bell (probably one of those near the demon's fane), was killed by a tiger as he was carrying off his plunder. The monkeys who dwelt in the adjacent forest obtained the bell, and amused themselves by ringing it. The people of the town having found the dead body of the man, and continually hearing the sound of the bell, were filled with intense horror, fully believing that the demon, enraged, had killed the thief, and was now ringing the bell. The town was in consequence nearly deserted, when an old woman, guessing the truth, went to the king, and said that for a small sum she would undertake to settle the demon. The king, delighted, gave her what she asked, and the old woman, after tracing the cabalistic circle,—the Kolam,—and pretending to go through certain incantations, entered the forest. By means of fruits which she strewed on the ground, she was enabled to decoy the monkeys, and, having obtained the bell as a trophy of her victory over the demon, she returned in triumph to the town. So little has the belief in devils been shaken, that in the India of the present day, it would, in a like case, be just as easy to deceive the people, and even their native Hindu rulers. Dr. Caldwell mentions that the process of demonification is still going on amongst the Shanars; and in every case the characteristics of the devil and his worship are derived from the character and exploits of his human prototype. There is a continued succession of devils claiming the adoration of the Shanars, and after a time sinking into forgetfulness. Among the demons most feared at the middle of the 19th century, he mentions Palevesham, a notorious robber during the latter period of the Mahomedan government.

A few of the demons are forms of Kali, connected with a debased and comparatively modern development of the Brahmanical system.

Devil-worship in Ceylon by the Rodya is performed in the jungle. A kind of altar is erected, and covered with the skin of the plantain tree. It is then scented with dammer resin, and cooked vegetables, placed on a plantain leaf, are laid on it, to which is added rice and flowers, and the blood of a red cock. The Kattadiya, or devil-dancer, then recites a charm, and the cure is supposed to be complete. The offering is left to be eaten by birds or animals. The devils Gerre and Meleyi are of two kinds.—*Dr. Caldwell on the Shanar; Kenrick's Phœnicia*, pp. 307, 314; *Dubois' India, quoted in Cole.'s Hind. Myth.* p. 378; *Sonnerat's Voyage*, p. 29; *Bunsen*, iv. p. 210; *Williams' Story of Nala*, p. 208.

DEVILS' HORSES. See Insects.

DEVISTHAN, a Hindu temple. Devisthana, temple revenue.

DEVOTTHANA. SANSK. Also Deotthan. The eleventh day of the light half of the month Kartik, when Vishnu is supposed to rise up from his four months' sleep at the end of the rainy season.

DE VRIESE, author of various memoirs on Malayan Island Plants, and also of a Monograph of Marattiaceæ, a work of great labour.

DEW.

H'nung, ...	BURM.	Shabnam, Aoos, .	HIND.
Rosée, ...	FR.	Ruggiada, ...	IT.
Thau, ...	GER.	Roci, ...	SP.

Some one has ventured the remark that at full moon, near the equator, more dew falls than at new moon, and to this are ascribed the moon heads (man hoofden), which, however, Jansen had but once seen during all the years which he had spent between the tropics. In British India, during the cold weather months, when rain very rarely falls, the dew is of very great importance to all the crops then in the ground.—*Jansen, in Murray's Phys. Geog.* p. 146.

DEWA, a divine being, whether resident upon earth or in a dewa-loka.—*Hardy*, p. 435.

DEWAK. Hind. Termes, white ants.

DEWAL. The Hindu temple in which the idol is placed, is called, as temples generally are, Dewal or Deval, from Deva, a deity, and Alciya, a house, or, literally, a house of god. The British and other people call it pagoda, a word unknown in India beyond the reach of European colloquial instruction, but which has been supposed to be derived from But-khana, two Persian words, or But-gada, Telugu words, both meaning the ghost-house. It may, however, be from Paigudi, a devil temple; also from Dahgopa, a Buddhist relic shrine. Dewal, in Sind, was so called from its celebrated pagoda. Its site is now doubtful.

DEWALA. Hind. Bankrupt.

DEWALA DEVI, daughter of Kamala Devi. On the fall of Nerwalla, the ancient capital of Gujerat, Kamala Devi was captured and taken into the harem of Ala-ud-Din; but her daughter Dewala Devi escaped with her father. She had been asked in marriage by the son of Ram Deo, the raja of Deogiri (Dowlatabad), but her father, proud of his Rajput origin, had refused to give her to a Mahratta, even though a prince. Kamala Deva, however, having expressed to Ala-ud-Din a wish to be joined by her daughter, Ala-ud-Din sent a strong army under a general to bring Dewala Devi to Dehli. In this extremity her father accepted the Mahratta prince, and sent off his daughter under an escort, but the escort was overtaken, the fair maiden seized, and carried to Dehli, where she was married to Khizr Khan, son of Ala-ud-Din. A few years after the death of Ala-ud-Din, the throne of Dehli was filled by Kafoor, a converted Hindu, who put out the eyes of Khizr Khan, filled the capital with Hindu troops, put to death all the survivors of Ala-ud-Din's family, and transferred Dewala Devi to his own zanana. See Kamala Devi.

DEWALDI, a heroine of Hindustan. When Cholan was on the throne of Dehli, Dewaldi roused her sons to battle, and, observing their unwillingness, she said, 'Would that the gods had made me barren, that I had never borne sons, who thus abandon the name of the Rajputs, and refuse to succour their prince in danger!' They acceded to her request. She then said, 'Farewell, my children, be true to your salt; and should you lose your head for your prince, doubt not you will obtain the celestial crown.' When Akbar invaded Chitor, the mother of Putta of Kailwa charged her son to put on the saffron robe, and die for his country.—*Calcutta Review*, No. 109.

DEWALI, properly Dipawali. Sansk. From Dipa, a lamp, and Ali, a row. A Hindu religious festival held about the end of October, in the last two days of the last half of Aswin and three days of Kartik, in honour of the goddess Kali and of Lakshmi, and to commemorate the destruction by Vishnu of the demon Taraki. The Hindus, after bathing in the Ganges or other river, anoint with oil, put on their best attire, perform a sraddha, and at night worship Lakshmi. On this festival of lamps all Hindus propitiate Lakshmi, the goddess of wealth and fortune, by offering at her shrine. In Rajasthan, on the Amavus, or ides of Kartik, every city, village, and encampment exhibits a blaze of splendour from lamps. Stuffs, pieces of gold and sweetmeats, are carried in trays and consecrated at the temple of Lakshmi, to whom the day is consecrated. The rana of Mewar dines with his prime minister; and this officer and his near relatives offer an oblation by pouring oil into a terra-cotta lamp, which the sovereign holds. Every votary of Lakshmi tries his chance of the dice, and from their success in the Dewali foretell the state of their affairs for the ensuing year. On the first day of the Dewali, the whole Hindu population of an Indian city bear branches of the sami, tulsi, and other sacred trees in procession, and walk round all the temples in the neighbourhood, offer salutation and prayer to their country's gods, in their several incarnations. A rainfall at that period of the year is highly advantageous to growing crops, and a proverb of the people of N. India is,—

'Jo min piya Diwali,
Jiya phus, jiya hali.'

'If showers fall about the time of the Diwali festival,' [what matter] whether you are lazy (lit. a bundle of sticks) or a real ploughman, [the crops are sure to be equally fine.]—*Postans' W. India*, ii. p. 177; *Tod's Rajasthan*, i. 70, 279. See Leviticus xxiii. 40.

DEWAN. Arab., Pers. In India, the chief officer of a second-rate sovereign. In Persia, a court of justice or of other business. A reception room is generally called the Dewan-i-Am, or public reception-hall. The Dewan Khana is the office room of the dewan, that part of the house of a Mahomedan where the master receives his visitors, and in which the men-servants reside; and the Dewani means pertaining to the dewan. The Dewani Adalat, under the E. I. Company, was a court of civil and criminal jurisdiction.—*Rich's Kurdistan*, i. p. 83.

Dewan, Pers., a collection into one volume of the entire odes of an author, whether in the Persian or the Hindustani tongue. In bringing them together, they are arranged alphabetically according to the letters in which the verses terminate. The Dewan-i-Sadi and Dewan-i-Hafiz are generally known.

Dewani is the civil department, in contrast to the foujdari or criminal. Dewan-i-Am, a privy council chamber. The Dewani of Bengal, Behar, and Orissa was conferred on the British by Shah Alam II., on the 12th August 1765. The office was a viceroyalty, and comprised the collection of the revenue, then three kror of rupees, and the administration of civil justice. The net revenue was two kror.

DEWANAGI-WANLU. Tel. Religious mendicants in Southern India, who accept charity only from one or other of the artisan goldsmith castes.

DEWA PUJA, or worship of the implements in use as the means of subsistence, observed by all Hindus, and by all the Kayasth caste at the Dewali and Hooly festivals.—*Malcolm's Central India*, ii. p. 167.

DEWAR, Diwar, perhaps more correctly Deehwar or Dehwar, is the god under whose special care a village is placed; the gramma-deva or *genius loci*, for whom a portion of grain is always set apart at each harvest.—*Elliot.*

DEWAR-GIRI. Hind. Tapestry, or cloth for adorning a wall.

DEWAS, a native state in Malwa, lat. 22° 42′ to 23° 5′ N., long. 75° 57′ to 76° 21′ E. The Dewas chieftaincy is held by a Mahratta, whose

ancestors came to Malwa with the first Baji Rao. The revenue of the state is 4,25,000 rupees, the area 256 square miles, and the population 25,000 souls. The chiefs have each received a sunnud guaranteeing to them the right of adoption. The chiefs are equal in rank, and have an equal share in all receipts. Each receives a salute of fifteen guns.—*Aitchieson's Treaties*, iv. p. 334.

DEWAT, the 6th note in the musical scale, 'La.'

DEXTRIN has the same composition as starch, but it is soluble in cold water.

DHA. BURM. A bill, a sword; in various forms, it is the inseparable companion of every man among the hundred forest tribes of Trans-Gangetic India. Among the civilised Burmans, however, it is more confined to the lower orders, the peasant and boatman, except as a weapon of war. The Burman's dha is a weapon about three feet long, with a slight uniform curve from end to end. About three-sevenths of this length is helve, the rest blade. The blade is generally about an inch and a quarter wide, with an obtuse point. It serves every purpose that a cutting weapon can serve, from making a toothpick to felling a tree, killing a pig or an enemy in battle. Very long and heavy dhas are worn by officials of the Burmese court.—*Yule's Embassy*, p. 158.

DHAE. HIND. A nurse. In Rajputana, the Dhabhae, or foster-brothers, often hold lands in perpetuity, and are employed in the most confidential places, on embassies, marriages, etc.—*Tod's Rajasthan*, i. p. 278.

D'HAGHA. GUJ. Thread.

DHAGOBA. See Buddha; Dagoba; Dhatugarbha; Topes.

DHAHIMA, a tribe of Rajputs recorded amongst the 36 royal races. They were the lords of Biana, and bore a high name for deeds of chivalry. Colonel Tod considered the tribe to be extinct, but they have three or four villages in Baghput. There are also Dhahima Ahir and Dhahima Jat in the same neighbourhood.—*Rajasthan*, i. p. 199.

DHAI or Dahi. HIND. Curdled milk.

DHAKH of Kashmir, a red and white bean, Phaseolus lunatus, etc.

D'HAKKA. SANSK. A form of the drum that was one of the insignia of royalty of the Chalukya dynasty when ruling at Kalian.

DHAKUN, a witch. Witchcraft is believed in all over Rajputana; but the people of Mewar, whose capital is Udaipur, have most faith in the belief. Her powers are believed to be unlimited, particularly at seasons of the Dassera and Dewali. In certain provinces a man will not marry into a family unless they have a witch among them, who may protect him from evil. Such witches are called Rakhavali, or guardians. The Jiggar Khor, or liver-eater of Sind, is the genuine vampire. An officer, after a long chase in the valley of Udaipur, speared a hyena, whose abode was the tombs, and was known as the steed on which the witch of Ar sallied forth at night. Evil was predicted; and a dangerous fall subsequently, in chasing an elk, was attributed to his sacrilegious slaughter of the weird sister's steed.—*Tod's Rajasthan.*

DHAL. HIND. A shield, an ear ornament.

D'HALIZ-KOONDLANA, treading the threshold, a Mahomedan marriage ceremony.

DHAL-PHOR. HIND. A sept of the Kurmi, a great agricultural tribe in Hindustan; the words mean clod-breaker.

DHAL SAHIB, a Maharram ālam, or banner; literally, Mr. Shield.

DHAMA-PADAM, a Buddhist sacred book of high authority. It gives the most faithful picture of the ethical spirit of Buddha's teachings.—*Bunsen, God in Hist.* i. p. 343.

DHAMAYANGYEE. Flat arches of stone and brick are not uncommon in Burma. Captain Yule observed two of brick, in windows in the Dhamayangyee temple at Pagan, where no suggestion of European or Indian aid could have helped. There is one flat stone arch in the northern gate of the fort, and another in a tomb, at Kurnool. There is one in the mediæval building of Roslin Castle, and in the magnificent Saracen gateway of Cairo, called Bab-el-Fitoor.—*Yule's Embassy.*

DHAMEE, this old Rajput state became independent of Kuhlor after the Gurkha war. The state was bound to supply forty begar, but this was commuted to a tribute of Rs. 720. Revenue, Rs. 4000; population, 2853.

DHAMEK, near Benares, a fine grove, the ancient Mriga-dawa, where Buddha first publicly preached his doctrine, which king Asoka commemorated by erecting a tower.

DHAMI. HIND. A follower of Prannath, a Hindu reformer who flourished in the 17th century in Bundelkhand.—*Wilson.*

DHAMMA. PALI. Dharma, SANSK. Law, duty; the doctrines or sacred writings of the Buddhists.—*Hardy, Eastern Monachism*, p. 435.

DHAMMAN or Dhamnoo. PANJ. Grewia elastica, *Royle*; G. oppositifolia, *Buch.* Grewia tiliæfolia? are trees of Cuttack. G. elastica has a reddish-coloured wood, pliable, strong, very plentiful in the Santal jungles; used chiefly for cart wheels.—*Calcutta Eng. Journal*, July 1860.

DHAMNAR, about 40 miles S.E. from Nemuch, but close to Chundivassa, contains Buddhist caves with a Brahmanical rock-temple behind. The principal group are Buddhist.—*Burgess*, p. 392.

DHAMNI. HIND. Portulaca oleracea? P. sativa, DUKH., Helicteres isora.

DHAMUN. HIND. Green tea, in Ladakh; also brick tea, in Kashmir. Tea in cakes, both black and green.

DHAN. HIND. Oryza sativa, unhusked rice or paddy, also growing rice. Dhan marri, a rice field.

DHAN. HIND. Wealth. Tan, Man, Dhan, body, mind, and substance.

DHANA, the Gond portion of a Hindu village, which is always separate from the rest. Also applied generally in the north-west as Wuzra, Nugla, or Poorwa.—*Elliot's Suppt. Gloss.*

DHANAK. HIND. Very narrow gold ribbon.

DHANAPATTI and Srimantoo, a romantic Hindu tale of adventures of a father and son, wealthy Banya merchants of the Ganges, who travelled to Coromandel, Ceylon, Java. Both of them were imprisoned in Ceylon.

DHAND. SIND. A pool of water, a marsh.

DHANDORA. HIND. Proclamation by beat of drum.

DHANGA. HIND. Riot, rebellion; any hiding-place of robbers.

DHANGAR is the Danaga of the Canarese-speaking races. The Dhangar in Telingana are in twelve tribes, who do not eat together nor intermarry. In the centre and south of the Peninsula, Dhangar are shepherds and wool-weavers,

kitchen gardeners and labourers. In the hill country of Ramgarh and Chutia Nagpur, there is a tribe so called, some of whom descend periodically into the plains for labour. There are 8059 Dhangar in Amraoti. Many Dhangar are settled in the towns of the south of India, occupied as labourers, kitchen gardeners, and dairymen, and they arrange themselves accordingly. Dhangars have largely settled as cultivators in the Indapur, Bhimatherry, and Purandhar talukas of the Bombay Presidency. The Maharaja Holkar, the sovereign of Malwa, whose capital is Indur, is a Dhangar. The Asal, or pure Dhangar, are pastoral only. The pastoral Segar Dhangar also weave blankets. The Teling Dhangar are cultivators, milkmen, and weavers of coarse woollens. The Mahratta Dhangar graze cattle and sheep, and clarify their butter into ghi. The Bangar Dhangar are purely shepherds, as is indicated by the term 'Ban-gar,' wild man or forest man.

The Dhangar of the peninsular Dekhan are of two sections, the Kota Pullia Dhangar, who keep sheep, and the Barji Hatkar, or 'shepherds with the spears.' The latter still hold much land on the N. borders of the Nizam's territory, and, until the British took it over, were notorious for pugnacity and rebellion, and they still continue a quarrelsome and obstinate race. They are supposed to have come from Hindustan in twelve tribes, and been impelled by the Gonds towards Hingoli and Bassim, which locality got the name of Bara Hatia, or the twelve tribes. They now occupy the hills on the north bank of the Pain Ganga. To die in the chase or in war is deemed honourable; and the Hatkar who is so killed is burned with his feet to the east; otherwise he is interred sitting with a small piece of gold in his mouth. The Hatkar are fine, able-bodied men, independent but arrogant; many of them never shave nor cut the hair of their face. The Hatkar can only have one laggan, but may have several pāt wives. Their widows can contract a pat marriage.

The Dhangar in the centre of the Peninsula are dark, almost black men, of slender and spare forms; they are quite dissimilar from the Gaoli in personal appearance, and all the sheep (Kuru, Karnatica, a sheep) are under the Kurubaru or Kurumbar race. They are also wholly distinct from the Ydayan or Yadava cowherd race, who are known in all the Tamil country as 'Pillai.' In all probability the dispersed Kurumbar of the Peninsula of India, some of them in towns and others almost nomade, are the fragments of the great shepherd race who held sway in the Arcot district in the early centuries of the Christian era. The Kurumbar and Dhangar have no similarity in appearance.

Dhangar, in the Lukti territory, bordering on Udaipur and Sultanpur, are short but muscular and able-bodied men, who speak a separate language. They do not follow Hindu rites, and they have no temples, but set up near their villages a stone with some rude carvings, which they worship in times of famine or sickness or calamity. They bury but sometimes burn their dead.

The Gaola is a cowherd, a dairyman, from Hindustan to Hyderabad.

The Kurubar are in the Canarese region, in the centre of the Peninsula. The Kurubar or Kurumbar and the Gaola dairymen keep aloof from each other.

The Mirda are a caste of migratory shepherds in the south of India.—*C. J. P. C. R.* pp. 6 and 7; *Campbell*, p. 33.

DHANGAR BASSA, a bachelor hall amongst the Bhuiya.

DHANK, 30 miles N.W. from Junagarh, formerly an important city, has a group of small caves. A few miles to its west is the village of Siddhsar, and in a ravine, called Jhinjuri Jhar, are five plain caves, cut out in calcareous sandstone. N.W. of Dhank, near Hariesan, on the W. side of Gadka Hill, are other nine caves.—*Burgess*, p. 201.

DHANKLI. HIND. A machine for raising water, called Pecottah in Tamil.

DHANUK. HIND. A bowman. Dhanuk and Danusha are names of a race in Northern India, but numerous in Behar, employed as archers, fowlers, and house guards, also in several menial occupations both of the house and field. Wherever they reside, the females are specially in request as midwives. Dr. Buchanan describes the Dhanuk of Behar, Bhagulpur, and Puraniya as engaged in agriculture like the Kurmi. Many of them are agricultural slaves. The Dhanuk are descended, according to the Padma Purana, from a Chamar and a Chandal woman. From the Dhanuk have proceeded Aherya, who are said not to eat dead carcases, as the Dhanuk do. There are reported to be seven subdivisions of the Dhanuk, Loungbusta, Mut'hurea, Kut'hurea, Jyswar, Magahi, Dojwar, and Chhilatya. These do not intermarry, or even eat or smoke together. They mix, indeed, so little with one another, that an individual Dhanuk is seldom able to mention more than two, or at most three, of these names as belonging to his fraternity. There are several Dhanuk in Dehli, and they are scattered over the North-Western Provinces; but Behar is the country in which they most abound. —*Wils. Glos.*; *Elliot's Suppl. Gloss.*; *Postans' Western India*, i. p. 167.

DHANUR VEDA, a book on weapons.

DHANWANTARI. There have probably been several persons of this name, and at different eras. The name occurs, along with those of Charaka and Susruta, in poems written in the time of Nala Raja. Professor Wilson supposed Charaka and Susruta to be of the 9th or 10th centuries A.D. A Dhanwantari is supposed to have been king of Kasi or Benares, and as such styled Deva-dasa Kasi Raja. He is regarded as the founder of Hindu medicine, and he takes in India the place occupied by Æsculapius amongst the Greeks. A medical work, bearing this name as its author, is still extant, and in use amongst all the Hindu physicians of British India. His era can only be conjectured to have been before Christ. The name is applied also to a teacher of medical science, to whom the authorship of the Ayur Veda is attributed; but other physicians, Bhela, Devodasa, and Palakapya, are also so named; and a physician of this name was one of 'the nine gems' at the court of Vikrama. It is also the name of a Vedic deity, to whom offerings at twilight were made in the N.E. quarter. In one Brahmanical account of the deluge, a Dhanwantari is said to have been, with other thirteen precious products, a physician produced at the churning of the ocean. Takaji-ca-coond, or 'fountain of the snake-king,' is about two miles east of Naoli, near the boundary of Bhynsror and Bhanpura. The road, through a jungle, over the

flat highland or Pat'har, presents no indication of the fountain, until you suddenly find yourself on the brink of a precipice nearly 200 feet in depth, crowded with noble trees, on which the knotted korū is conspicuous. The descent to this glen is over masses of rock; and about half-way down a small platform, are two shrines, one containing the statue of Takshac, the snake-king, the other of Dhanwantari, the physician who was produced at the churning of the ocean. The coond or fountain is at the southern extremity of the abyss. Dhanwantari of the Hindus has not an attendant serpent, like his brother Æsculapius of Greece. 'The health-bestowing Dhanwantari, the celestial physician, arose from the sea when churned for the beverage of immortality.' He is generally represented as a venerable man with a book in his hand.—*Rajasthan*, ii. p. 718; *Colem.'s Hind. Myth.* p. 383; *Moor*, p. 342; *Dowson.*

DHAOLA DHAR or Dhalola Dhar, a mountain chain in Kangra district, Panjab, formed by a projecting fork of the outer Himalayan range. Below, the waste of snow-fields is succeeded by a belt of pines, giving way to oaks as the flanks are descended, and finally merging into a cultivated vale, watered by perennial streams. The highest peak attains an elevation of 15,956 feet above sea-level, while the valley has a general height of about 2000 feet. Dhaola Dhar means White Mountain, from Dhavala, SANSK., white. The whole length of the outer or sub-Himalaya is nearly 300 miles from S.E. to N.E. It is pierced by the Ravi, the Chenab, the Punach, and the Jhelum rivers, which divide it into separate districts. The snow-line is about 16,000 feet in height. Dhaola Dhar is called by several names in the maps,—Mani Mahes ki Dhar, or the mountains of the holy lake of Mani Mahes; and Hugel calls it Palam-ki-dar and Chamba-ki-dar. The rocks are clay and mica slate.—*Imperial Gazetteer; Cleghorn's Report*, p. 97.

DHAR, a native state in Central India, between lat. 22° 1′ and 23° 8′ N., and long. 74° 43′ and 75° 35′ E.; and the town of Dhar, lat. 22° 35′ N., long. 75° 21′ E., in Malwa, 33 miles W. of Mhow. The level of the railway, 1850 feet. The Puar family was one of the most distinguished in early Mahratta history; and Anand Rao Puar is usually considered as the founder of the principality of Dhar, which, with some adjoining districts, and the tribute of some Rajput chiefs, was assigned to him by the first Baji Rao, Peshwa. For twenty years before the British conquest of Malwa, the Dhar state was subjected to a continued series of spoliations, chiefly at the hands of Sindia and Holkar, and was preserved from destruction only by the talents and courage of Meena Bai. Anand Rao Puar died in 1807, and was succeeded by his posthumous son, Ramchander Rao Puar, on whose mother, Meena Bai, the administration devolved. Ramchander died early, but Meena Bai, with the consent of the neighbouring chiefs, adopted her sister's son, under the name of Ramchand Puar. The Dhar state rebelled in 1857, and was confiscated, but it was subsequently restored to Anand Rao Puar, with exception of the Bairsea pargana. The area of the state is estimated at 2091 square miles, and the population at about 125,000 souls.—*Buch. Hamilton; Treaties, Engagements, and Sunnuds*, iv. p. 425.

DHARA. SANSK. A bearer or supporter. Chau-dhari, the four bearers, supporters of the platforms of Hindu temples.

DHARALA. MAHR. Applied to the Koli, Paggi, and others, who habitually wear arms.

DHARI, name of a waterfall near the Hirnphal, or Deer's Leap, on the Nerbudda.

DHARICHA. HIND. Second husband of a widow.

DHARINJO. URIYA. A common tree of Ganjam and Gumsar; extreme height 60 feet, circumference 4 feet. The bark is used medicinally by women after childbirth; the juice of the leaves is supposed to cure itch.—*Captain Macdonald.*

DHARMA, a tract of country in Kumāun district, N.W. Provinces, lying on the Tibetan side of the main Himalayan range, between lat. 30° 5′ and 30° 30′ N., and between long. 80° 25′ and 80° 45′ E. It is of considerable elevation, its chief peak, Lebong, rising 18,942 feet above sea-level; while the Dharma pass, on the northern frontier, leading into Hundes, reaches a height of about 15,000 feet. The habitable portion consists of narrow and very rugged valleys, traversed by the river Dhauli and its tributaries. The inhabitants are Bhotiya, a Tibetan race, who carry on a trade between Hundes and Kumaun, by means of pack-sheep, over the Dharma pass. Estimated area, about 400 square miles.—*Imp. Gaz.*

DHARMA. HIND., SANSK. Charity, law, virtue, morality, justice, religious ritual, religious law, legal or moral duty. Dharma, Artha, and Kama are the three principles on which Hindus base their ideas of life and its duties. Dharma, the acquisition of virtue and religious merit and obedience to the ordinances of religion; Artha, the acquisition of arts, friends, and property, land, gold, wealth, cattle, equipages; and Kama is the enjoyment of appropriate objects by the five senses. Dharma-karta, the manager of a Hindu temple, a church-warden. Dharmsala, a resting-place for travellers. Dharma-sala, a religious assembly. Dharma-sastra, the Hindu code of laws, the whole science of law. Dharma-kari, a judge. Dharma-das, a temple servant. Dharma-swama, literally faith (dharma), to his lord (swama). In the Dharmarcha or Dharm-adharma ordeal, figures or drawings of dharma and adharma, virtue and vice, are covered with cow-dung and put in a covered vessel, and the accused is allowed to draw; if the dharma image be withdrawn, he is innocent.

DHARMA, the eight scriptures of the Nepalese Buddhists.

DHARMAPADESAKA, the teacher of Dharma, the ordinary term in use to designate a religious teacher.

DHARMAPURI, a mythological city of the Hindus, twelve months' journey from Yamapuri, another fabulous city of Hindu mythology. It is the same with the purgatory of St. Patrick in the gold island.

DHARMA-RAJA, the title of the spiritual ruler of Bhutan, literally king of virtue. He succeeds by incarnation.

DHARMA-RAJA, Shinjo, Telūgū, and Choigyal, Tibetan, is from Dharma, justice, and Raja, a king. A name of the Hindu deity Yama in his beneficent form. He is the king of justice, whose countenance the virtuous only see; the wicked see him as king of the infernal regions. In the Hindu religion he is the god of eternal justice. Antaka

is an attribute of Yama or Dharma-raja, in the character of the destroyer.—*Cole.'s Myth.* p. 379.

DHARMA-SASTRA, the whole code of Hindu law, but more especially applied to the laws of Manu, Yajnawalkya, and other sages, variously enumerated from 18 to 42, who are supposed to have recorded the Smriti, or recollections of what they received from a divine source. Of these, the greatest are Manu and Yajnawalkya. The works are generally in three parts,—Achara, rules of conduct and practice; Vyavahara, judicature; and Praya schitta, penance.—*Dowson.*

DHARMA-SUTRA, a term sometimes given to the Samaya charika rules.—*Muller.*

DHARMSALA, a sanatorium in the Kangra district of the Panjab, in long. 76° 22′ 46″ E., and lat. 32° 15′ 42″ N. The houses are built up the hill, the lowest being at 4000 feet, the highest 7000 feet. The sanatorium is on one of the spurs running south from the great range of Dhaola Dhar. This range runs east and west, at heights of from 13,000 to 19,000 feet, and forms a great wall on the north; it is due to this range that the climate of Dharmsala is so mild, and has such a heavy rainfall. Kangra, said by Lord Canning to be the most beautiful district in India excepting Kashmir, is surrounded by lofty mountains, interspersed with undulating hills, and situated between the rivers Ravi and Sutlej. On one side it has the territories of Kashmir and Chumba, on the other the wild but romantic hunting-fields of Kulu, Spiti, and Ladakh. Various races of men, speaking different languages, are distributed over its surface. Every tone of climate and variety of vegetation is here to be met with, from the scorching heat and exuberant growth of the tropics, and barren heights destitute of verdure and capped with perpetual snow.—*Dr. W. P. Dickson*, 1870; *India Annals*, No. 227, 1870; *Paharee.*

DHARMSALA. Hind. A building erected for a religious or charitable purpose. It is like the sarai or caravansari of Persia. A house for the accommodation of travellers or pilgrims, or for the reception of the sick or poor. In India they are of varied forms,—sometimes a quadrangle, open all round and to the sky, and with one entrance; sometimes small rooms, both on the inside and outside of the surrounding walls.

DHARNA BAITHNA, literally, to sit Dharna, was a practice put in force in several parts of India by creditors, who sat down before the doors of their debtors, so as to close all exit unless over the sitter's body, and thus compel a payment of their claims. The practice, up to the 19th century, was familiar at Benares, and may be translated caption or arrest. It was used by the Brahmans to gain a point which could not be accomplished by any other means; and the process was as follows:—A brahman who adopts this expedient for the purpose mentioned, proceeds to the door or house of the person against whom it is directed, or wherever he may most conveniently intercept him. He there sits down in dharna, with poison or a poniard, or some other instrument of suicide in his hand, and, threatening to use it if his adversary should attempt to molest or pass him, he thus completely arrests the debtor. In this situation the brahman fasts; and by the rigour of the etiquette, which is rarely infringed, the unfortunate object of his arrest ought also to fast, and thus they both remain until the institutor of the dharna obtains satisfaction. In this, as he seldom makes the attempt without resolution to persevere, he rarely fails; for if the party thus arrested were to suffer the brahman sitting in dharna to perish by hunger, the sin would for ever be upon his head. This practice has become almost unheard of in late years; the last occasion in Madras was about A.D. 1846; but formerly even the interference of British courts often proved insufficient to check it, as it had been deemed in general most prudent to avoid for this purpose the use of coercion, from an apprehension that the first appearance of it might drive the sitter in dharna to suicide. The discredit of the act would not only fall upon the officers of justice, but upon the Government itself. The practice of sitting in dharna was not confined to brahman men. It was had recourse to by Benu Bhai, the widow of a man of the brahmanical tribe, who had a litigation with her brother-in-law, Bal Kishen, which was tried by arbitration, and the trial and sentence were revised by the court of justice at Benares, and again in appeal. The suit of Benu Bhai involved a claim of property and a consideration of caste, which her antagonist declared she had forfeited. Originally it was practised by brahmans, but was prohibited by Reg. 7 of 1820 of the Bengal Code. In the south of India it is done before idols for obtaining the object of desire. It is an ancient practice. Genesis xxiv. says, 'I will not eat until I have told mine errand,' and a brahman sometimes went to a house, sat down, and refused to eat till he had obtained the object he had in view. The 'Englishman' newspaper relates that about 1850, a man named Chutterbhooj, son of a well-known and respectable Charan of Udaipur, carried to the late chief of that state certain grievances which he considered himself to be suffering in connection with his village. Failing to secure redress by ordinary measures, he took the unusual course of intruding on the chief without permission, for which breach of etiquette he was forbidden to enter the palace again. Accordingly, being under a sense of degradation, ill-feeling, and annoyance, engendered by the prohibitory order, he indulged in satires and philippics against his chief, who thereupon confiscated his village. Upon this, Chutterbhooj proceeded to Sulumbur, which at that time was at enmity with the chief of Udaipur, and this step only incensed the chief all the more against him. Here he appears to have been provided for, but subsequently wandered about from place to place trying to obtain redress, but without being able to secure either the forgiveness of his chief or the restitution of his village. In this state of feeling he appears to have given way to the superstitious idea, still prevailing amongst the Rajputs, that the shedding of his own blood or the blood of his family would bring destruction upon those who had offended him, if it did not secure a ready attention to his real or imaginary wrongs. In 1859, therefore, whilst travelling through the jungle with his two wives, two slave girls, and a servant, together with a party of the Meena, who were his retainers, he one day dismounted and gave his horse in charge to the servant, and began to smoke. Then, advancing a little distance, he suddenly killed the servant, and called upon the Meenas to dismount the women. His orders were obeyed. One slave girl fled away with her boy to a neighbouring village, and escaped, but the three

other women were killed. The slave girl informed the villagers of what had occurred, and they went out and saw the dead bodies, and carried them away, and burnt them. The slave girl died the next year, and Chutterbhooj never turned up for six years after the offence had been committed. He then came in and confessed to having murdered the women and servant. Accordingly he was tried and convicted of murder, and the Viceroy was fully of opinion that the man deserved hanging, but that, considering the number of years which had elapsed, the prevalence of superstition, and the lawlessness which prevailed in that part of Rajputana at the period in question, when many such acts were committed with impunity, His Excellency commuted the sentence to transportation for life. The inviolability of a brahman, and the sin attached to causing the death of one in any way, is inseparable, and to this, according to Sir William Jones, may be traced the practice of dharna.

DHARNI, a Nepal weight of three seers.

DHARWAR, a town which gives its name to a revenue district in the Southern Mahratta country, lying between lat. 14° 17′ and 15° 50′ N., and long. 74° 51′ and 75° 57′ E., with 988,037 inhabitants. Between 1787 and 1796, famine occurred from a succession of droughts, accompanied by swarms of locusts. The next famine was in 1802-3, occasioned by the immigration of people from the valley of the Godavery and the march of the Peshwa's army through the country. In 1832, from want of rain, prices ruled very high. Owing to successive hot seasons, famines recurred in the years 1866 and 1877.—*Imp. Gaz.*

DHASHT-i-KIPCHAK, the Sahara of Asia.

DHASRA, religious mendicants in Southern India, who hold an iron worshipping lamp in their hands, and perform on the jangata, tarte, and sinku. They walk before a corpse when being carried to the funeral pile.

DHAT, an isolated and now dependent chieftainship of which Oomerkote is the capital. It separates the Bhatti race from the Jareja race. Its prince is of the Pramara race and Soda tribe, ancient lords of all Sind. The Dhatti is the Rajput tribe inhabiting Dhat, and in no greater numbers than the Kaorwa, whom they resemble in their habits, being entirely pastoral, cultivating a few patches of land, and trusting to the heavens alone to bring it forward. They barter the ghi, or clarified butter, made from the produce of their herds, for grain and other necessaries of life. Rabri and chauch, or porridge and buttermilk, form the grand fare of the desert. A couple of seers of flour of bajra, jooar, and kaijri is mixed with some seers of chauch, and exposed to the fire, but not boiled, and this mess will suffice for a large family. The cows of the desert are much larger than those of the plains of India, and give from eight to ten seers (eight or ten quarts) of milk daily. The produce of four cows will amply subsist a family of ten persons from the sale of ghi; and their prices vary with their productive powers, from ten to fifteen rupees each. Rabri, analogous to the kous-kous of the African desert, is often made with camel's milk, from which ghi cannot be extracted, and which soon becomes a living mass when put aside. Dried fish from the valley of Sind is conveyed into the desert on horses or camels, and finds a ready sale amongst all classes, even as far east as Barmair. It is sold at two dokra (coppers) a seer. The poora, or temporary hamlets of the Dhatti, consisting at most of ten huts in each, resemble those of the Kaorwa.—*Tod's Rajasthan*, i. p. 45.

DHATUGARBHA, from Dhatu, relic, Garbha or Gabba, a casket, softened into the Dhagoba, is the altar, shrine, or relic receptacle in which the relics of Buddha are kept. The dhagoba is the descendant of the sepulchral tumulus of the Turanian races, whether found in Etruria, Lydia, or among the Scyths of the northern steppes. By some it is supposed to be the source of the word Pagoda. It is also known by the Sanskrit word Chaitya. Dhagoba is a Buddhist shrine enclosing or protecting some sacred relic; but by some they are supposed to be shrines built over the remains of persons of the Buddhist faith, and consecrated to their saints.—*Prinsep's Antiquities by Thomas*, p. 154. See Dhagoba.

DHAULI, 20 miles south of Khatak, and 20 miles north of Jagannath, has two separate edicts of Asoka. The first edict is addressed to the public officers of the city of Tosali, and commands murderers to be imprisoned. Both edicts appoint two tuphas, or colleges for meditation and the propitiation of Heaven. The question of atheism in ancient Buddhism is set at rest by these edicts, which repeatedly speak of this world and the world hereafter; and the people are expressly commanded to propitiate Heaven, and to 'confess and believe in God, who is the worthy object of obedience;' or, more literally, 'Him, the eternal, ye shall propitiate by prayer.'—vi. p. 442.

DHAURA. Hind. Grislea tomentosa. The scarlet flowers, dhau ka phool, are considered stimulating, and given to women in labour; are also used in dyeing. The gum, dhaura or dhau ka gond, is white in colour, like the katira and tragacanth gums, swells in water. In dyeing cloth it is applied to those parts that the dye is not wished to touch. It is eaten in Luddoo. One maund costs ten rupees.—*Gen. Med. Top.* p. 133.

DHAURI. Hind. Coarse leather shoes.

DHAUSSA. Hind. A kettle-drum, carried on horseback.

DHAVA. Hind. A thatch grass.

DHAWALIGIRI, a mountain in Nepal, in lat. 29° 11′ N., long. 82° 59′ E. One of the loftiest peaks of the Himalayas, rising 27,600 feet above sea-level.—*Imp. Gaz.*

DHAWAR. Mahr. A tribe of iron-smelters.

DHAYA. Hind. Land on a river bank, but subject to the occasional overflow of water; also ridges along the dry course of a river, which has turned in another direction.

DHE. Hind. In the N.W. Provinces, a subdivision of the Jat tribe.

DHE. Hind. of the Cis-Sutlej. Old mounds yielding saltpetre earth.

DHEKUDI. Mahr. A water-lift, the pe-cottah of the Tamil, and dhenkli of Hindustan. Dhenka or Dhenki is a lever of any kind; a pedal for husking rice. The rice is first damped with water. It is a mortar with a pestle worked as a treadle.

DHELLA. Hind. Small weights for separating the gold strands in tinsel-making.

DHENKLI. Hind. A water lever, a machine for raising water, the pe-cottah or yettam of the

Tamil countries. It consists of a horizontal lever, with a weight at one end and a bucket of iron or an earthen pot at the other, slung from or resting on an upright bamboo or pole; this, being lowered into the well-and returned to its original place, brings up a bucket of water. The name is provincially corrupted into dhooklee, dhiklee, and in Gorakhpur into dheokul. The word appears to be derived from Dhulkana, to roll, to overturn. The posts which act as the fulcra are called t'hoonya; the rope, burt; and the bucket, kurwala. The dhenkli is seldom used in the Panjab proper, except for the irrigation of rice fields, and in river tracts for melons and tobacco. In the Peninsula of India it is in use in all the finer garden or even in field cultivation.—*Elliot's Sup. Gloss.; Powell's Handbook*, p. 208.

DHER, a non-Aryan race, many of them dwelling as predial slaves in parts of India, in the Panjab, rare in the N.W. Provinces, many in the Saugor territory. In the Nagpur territory they have acquired some consideration from their employment as Dalal or writ-servers. In the Dekhan they are doubtless the same as the Holiar of the Canarese, the Mhar of the Mahrattas, and the Pariah of the Tamil and Teling races. In the Western Provinces, though they are not often found in any numbers, they appear to have left the remembrance of their name, for it is a common term of abuse to call a man a Barra Dher, or a low-caste fellow. They eat dead animals, clean skins and sell them to Chamar tanners. In Rajputana, the Dher will not eat hogs, either tame or wild; the latter they hold in great abomination, notwithstanding their Rajput masters look upon them as a luxury. Dherwarah, the locality outside the Hindu towns where the Dher race reside.—*Elliot's Sup. Gloss.; Journal, R.A.S.* p. 224.

D'HERBELOT, author of Bibliothèque Orientale La Haye, 1777.

DHERI, a Sufi sect in Persia, who believe the world is uncreated and indissoluble.—*Malcolm.*

DHEVARA, a tribe of boatmen.

DHEWUS. Hind. Dalbergia Ujjainensis, a timber of Nagpur, of a light colour, liable to be devoured by white ants. Its strength is considerable. The young trees are cut for bandy poles. It sells at 8 annas the cubic foot.—*Captain Sankey; Major Pearse.*

DHIMAK. Hind. White ants; properly Dewak.

DHIMAL, a race in the sal forest of the Terai, who, about the close of the eighteenth century, migrated to the north and east of the Koch from Nepal. The Dhimal dwell between the Kuki and Dhonla, between the open plains and the higher levels of the mountains, and their villages, though distinct, the people not intermarrying, are intermixed with the Bodo. The Dhimal differ from the Bodo in their language and their pantheon. The deities Data and Bidata preside over marriage, the feast of which is prolonged through three days, and costs from 30 to 40 rupees. They bury their dead. The Dhimal of the eastern portion of the Terai are estimated at about 15,000 souls.—*Latham's Descriptive Ethnology.* See Bodo; India.

DHIMAR, a branch of the bearer or Kahar race, but sometimes considered offshoots of the Mullah or boatman race. They are chiefly employed in fishing and palanquin-bearing.—*Wils.*

DHIMEREE. Uriya? A tree of Ganjam and Gumsur; extreme height 40 feet, circumference 4½ feet. Bandy wheels are sometimes made of the wood; but it is considered sacred, and is burnt when libations are offered. The fruit is eaten; a juice extracted from the root is used in rheumatism.—*Captain Macdonald.*

DHINGAN, in Purniah, an agricultural slave.

DHINGANA, vulgo Dheegana (lit. a forfeit), a demand of a forfeit at a game. Dhingana Budhnee, the earthen pot used on this occasion.

DHI RAJ. Sansk. A monarch, an emperor, a ruler.—*Gloss.*

DHIRHOR, a tribe of the Ahir in Benares and Gorakhpur. They are reckoned in the Tashrih-ul-Akwam amongst the Doab Ahir.

DHOB. It is customary for Hindu fathers to bind round the arm of the new-born infant a root of that species of the amirdhob, the imperishable dhob grass, the Cynodon dactylon, well known for its nutritive properties and luxuriant vegetation under the most intense heat.

DHOBAL, a brahman tribe in Garhwal.

DHOBI. Hind. A washerman; one of the lowest castes of Hindus. A woman is called Dhobin. Various subdivisions are recognised, the members of which do not eat, drink, or intermarry together. There are seven such in the N.W. P., but the septs differ, or are at least differently named in different provinces. Their names are the Magadhiya, Ajudhiya, Kanaujiya, Belwar, Gosar, Bathare, and Pagahiya. Other tribes, Shaikh and Bhaika, are Musalmans. The cultivating Dhobi do not intermarry with the washing Dhobi. The class calling themselves Rajdhob are said generally to be engaged in the operation of rice-cleaning.

The cleansing is effected by steaming, and beating the clothes on a stone. The poorest Hindu does not wash his own clothes.—*Sherring's Tribes; Calcutta Review*, No. 110.

DHOBI'S EARTH is a native carbonate of soda, called sajji matti in Hindustani, and applacaram in Tamil and Telugu. It is a whitish-grey, sandy efflorescence, which often covers miles of country where decayed white granite forms the surface soil. This earth begins to accumulate in the dry weather; immediately after the rains, it can be scraped off the surface to the depth of two or three inches, and by repeated boiling and the addition of a little quicklime the alkali is obtained of considerable strength. With a little care, very clean carbonate of soda can be obtained, fit for the manufacture of toilet soap, white glass, and glazes for pottery. The Nellore, Cuddapah, Masulipatam, and Chingleput districts yield this earth in great quantities; and it is also found largely at Puducottah, Hyderabad, Bellary, and Mysore. The richest in alkali is from the territories of the Nizam, the quantity of anhydrous carbonate being about 67 per cent. Repeated attempts have been made to prepare barilla from it for exportation, and very fair specimens have been exported at different times, but the moderate price of the carbonate of soda of England, prepared from sea salt, will always prevent this from being a remunerative article of export. The coloured frits for bangle glass, in making which it is used, have lately, however, become an article of export from the Madras Presidency. It exists in immense quantities in many parts of India, in Bengal especially, in the districts of Monghir, Purniah, and

Cawnpur. It contains from 40 to 50 per cent. of carbonate of soda, traces of sulphate of soda, organic matter, clay, sand, and oxide of iron. The salt can be extracted by washing the mineral without incineration, but the organic matter is dissolved at the same time, and gives a deep brown solution, from which pure crystals cannot be obtained. Firing destroys this substance, and then the solution is colourless. But care must be taken not to push the heat beyond low redness, for the alkali at a higher temperature combines with the sand and clay, and the whole runs into green glass, insoluble in water. In Europe, barilla is prepared either by burning seaweeds and lixiviating the ashes, the product being termed kelp and barilla, or by decomposing common salt by sulphuric acid, and then roasting the resulting sulphate with chalk, sawdust, and fragments of iron. The mass when washed gives the carbonate of soda.—*Mr. R. Reynolds in Pharmaceutical Journal*, 1853, vii.; *M. E. of* 1855 *and* 1857; *Beng. Phar.*

DHOGREE, Kangra hillmen who work at iron-smelting.

DHOL. HIND. A large drum, both sides covered with leather, and played upon with the hands. Dholuk or Dholkee, a drum only one side covered with leather; a small drum.

DHOLE. HIND. The wild dog.

DHOLI, a Gond tribe who dwell in jungly districts, and are employed as goatherds.

DHOLNA. HIND. A sort of amulet.

DHOLPUR, a town on the banks of the river Chambal, which flows for 100 miles through Dholpur territory. Dholpur state lies between lat. 26° 22′ and 26° 57′ N., and long. 77° 26′ and 78° 19′ E., with an area of 1174 square miles and 227,976 inhabitants. The most numerous classes are Brahmans 36,884, and Chamars 32,092. Thakurs number 23,703; Gujars, 17,229; Kachhi, 15,090; Mina, 10,620; and Lodha, 8050. The remainder of the population is divided among 75 other castes. There are 9964 Mahomedans, who reside for the most part in the towns of Bari and Dholpur.

Lukindar Singh, known as the rana of Gohud, was the first of the chiefs of Dholpur with whom the British Government formed political relations. The family belong to the Jat tribe, and first rose to notice under the Peshwa Baji Rao. After the overthrow of the Mahrattas at Panipat, the uncle of Lukindar Singh rebelled, and possessed himself of the fort of Gwalior. During the Mahratta war which ended in the peace of Salbye, the British in 1799 formed a treaty with him. Much discussion, however, arose in 1803, 1804, and 1805, but ultimately the river Chambal became the boundary between Sindia's territories and Dholpur. Maharana Keerut Singh lived to a great age. He died in 1836, and was succeeded by Bhagwant Singh, who rendered assistance to the fugitives from Gwalior in 1857, but his minister Deo Huns incurred the displeasure of Government by plundering villages in the Agra district. Bhagwant Singh received the right of adoption, and was declared entitled to a salute of fifteen guns. The military force of the state consists of about 2000 men.—*Treaties, etc.*, iv. p. 108; *Imp. Gaz.*

DHONDAL. MAHR. A black stony ground, retentive of water.

DHONDAL and Gogawut are two tribes amongst the most ancient of the allodial chieftains of the Indian desert; the Dhondal being descendants of Rao Gango, the Gogawut of the famous Goga the Chauhan, who defended the Sutlej in the earliest Mahomedan invasion recorded. Both Goga and his steed Jowadia are famed in Rajasthan.—*Rajasthan*, ii. p. 90.

DHONEE. HIND. A fire lighted by fakirs, over which they sit, imbibing its smoke.

DHONI. HIND. A coasting sloop. See Boat.

DHONPATTA. HIND. A leaf used in tanning.

DHOR, HIND., TEL.; Dhoria, CAN.; Dhorata, MAHR., are found in most of the larger villages of Southern India. They are tanners, but are regarded as Hindus, and, unlike the Mhar and Mhang, reside within the villages. They do not partake of animals that die of disease. They never devote their young women to the gods. They are looked on by the Pariah or Dher as vile, and are not associated with in eating or intermarrying. The Dhor are robust, fair, short men, with well-developed chests, wide faces, light-coloured eyes, many of them with a light moustache, and in all their features they present evidence of a Mongol origin. They never eat the large horned cattle, the cow, buffalo, or bullock, nor do they eat dead animals; but fowls, fish, deer, goats, and sheep are lawful. They marry in their own tribe, making the marriage procession on a bullock, and say that they are not entitled to proceed on a horse. Like almost all the idol-worshipping races of India, they worship, at anniversaries, the chief implements of their trade, which in their case is the tan-pit or earthen jar in which the hides are steeped, streaked with red lead; but they weekly cow-dung a small spot in their house, on which they burn incense, place flowers and wheaten cakes covered with rice, bow down, worship, and eat. The deity thus invoked, one family at Oodghir said, was Bawa Adam, whom they consider to be Mahadeva; and inquiry elicited the information that about 60 or 80 miles west of Punderpur is a stone named Bawa, or Father Adam. It is doubtless the ordinary lingam there. They also worshipped Ai, whom they designate as the Bhawani at Taljapur, but Khandoba at Malligaum also receives their worship. The temple guardians, however, do not permit the Dhor to approach near to the idols, as their trade of workers in skins and hides makes them unclean. They bury the dead who have fallen victims to smallpox and cholera, but those from some other diseases are burned; a pregnant woman dying is burned. They make leather from hides, and manufacture such articles as are used for water purposes, the mot bucket, the dhol and pak'hal.

DHOR, horned cattle; also called Gai-goru.

DHOTAR or Adhotar. HIND. Coarse muslin.

DHOTE or Dhatti is the Rajput tribe inhabiting Dhat. See Dhat.

DHOTI. HIND. Dovati, SANSK. The unsewed garment with which Hindu men clothe the lower parts of their persons. It is mentioned by Nearchus. It is passed round the waist, then between the legs, and fastened by being tucked in behind, and the appearance becomes that of wide or narrow trousers. A coarse cotton one, worn by cultivators and labourers in the field, may cost about two rupees. One of yellow silk, called pitambar, is largely made at Benares. With every Hindu man, of all parts of India alike, the dhoti is an indispensable garment. Should he even wear drawers or trousers, he will have a dhoti, large or small,

underneath. It is a single piece of cloth, from two and a half to three and a half yards long by two to three feet broad, with ornamented ends and borders; but may be somewhat broader and longer. As a general rule, there is literally no change up to the present day, from the costume of the male figures in Buddhist and Hindu sculptures of nearly two thousand years ago. All other articles of male attire are sewn garments, cut out by tailors and made by them; and there are, perhaps, as many varieties of vests and tunics, angraka, joobbha, koorta, chapkun, mirzai, and the like, as there are surtouts, paletots, cambridges, etc., fashioned in Europe. Many of these are worn by Mahomedans and Hindus alike, the only difference being that the Hindu ties or buttons his vest on the right side, the Mahomedans on the left. Hindu tailors are found everywhere, possibly descendants of the needle-plying handicraftsmen, who, like the weavers, smiths, and carpenters, found a place in the enumeration of trades in Menu's Institutes and the Yagnyawalkya. The texture of the dhoti, saree, and lungi fabrics, manufactured in Britain and sent to India, is not that required by the people, nor what they are accustomed to. It is in general too close, too much like calico, in fact, which of course makes the garment hot, heavy in wear, and difficult to wash. Again, the surface becomes rough, and, as it is generally called, fuzzy in use, while the native fabric remains free. Comparatively few native women of any class or degree wear white; if they do wear it, the dress has broad borders and ends. But all classes wear coloured cloths,—black, red, blue, occasionally orange and green, violet and grey. All through Western, Central, and Southern India, sarees are striped and checked in an infinite variety of patterns. Narrainpet, Dhanwar, and Muktul, in the Nizam's territories, Gudduk and Bettigerry in Dharwar, Kolhapur, Nasik, Yeola, and many other manufacturing towns in the Dekhan, Arnee in the south, and elsewhere, send out articles of excellent texture, with beautifully-arranged colours and patterns, both in stripes and checks.

DHOWA. Hind. A whitish-coloured wood, close-grained and hard. Plentiful in the Santal jungles and hills from Ranibahal to Hasdiha. Used for cart-wheels, beams, and door-posts by the natives, also for mallets and tent pegs.—*Calcutta Engineers' Journal*, July 1860.

DHRANGADRA, a native state in Kattyawar. Its chiefs are of the Jhala family, and of great antiquity.—*Imp. Gaz.*

DHRISHTA-DYUMNA, brother of Draupadi, and commander-in-chief of the Pandava in their war with the Kaurava. He killed Drona, and was in turn killed by Aswatthaman, son of Drona. —*Dowson.*

DHRITA RASHTRA, elder son of Krishna Dwaipayana by the widow of Vichitra Virya, king of Hastinapura. He was brother of Pandu, but was blind, and on that account was set aside from the throne; but he succeeded to it on Pandu retiring. He married Gandhari, and his sons, Duhsasana and Duryodhana, were named Kaurava. He had abdicated in favour of Duryodhana, at whose suggestion he banished the Pandava princes, his own nephews, from his kingdom. It was his sons and those of his brother Pandu who fought for supremacy at Kuru Kshetra. The chief of his sons were Duryodhana, Duhsasana, Vikarna, and Chitrasena. His sons fell in the eighteen days' battle of Kuru Kshetra. Gandhari, after the battle of Kuru Kshetra, retired with Dhritarashtra and his mother Kunti to the jungle on the Ganges, where the maharaja died, or was burned in a forest fire.

DHRUVA, generally the pole of a great circle of the sphere, particularly the celestial poles. Uttara Dhruva, the North Pole, also the Polar Star; Dacshina Dhruva, the South Pole. This term is also used to signify a constant arc, referring to the distance of a planet from the beginning of the sidereal zodiac. Dhruva means more commonly an epoch to which a computation is referred. Lastly, it is the name of the Yoga Star of the 12th Nacshatra, supposed to be the same as β Leonis.—*Warren's Kala Sanhita.*

DHUA. In Bikanir, the six items of the revenue are,—Khalisa, or fiscal revenue; Dhua; Angah; town and transit duties; Pusaeti or plough-tax; and Malbah.—*Rajasthan*, ii. p. 205.

DHUBBOOS, a rod of iron about a foot long, with a knob at one end and a sharp point at the other, having from fifty to a hundred hollow rings, which, when shaken, rattle against one another; used by fakirs, who wield it about, striking their abdomen of a sudden with the sharp point.

DHUB-KALA, the Indian hot season. According to the Shastra, the seasons are six in number, each comprising two months. A more definite division is Choumasa or Burk'ha, the four months of the rainy season; Seeala, Jara, or Mohasa, the cold season; and Dhub-kala or K'hursa, the hot season.—*Elliot.*

DHUBKI, a wood of Nepal, also called bechia-cori, sulla, and surrendhul. Its branches are used in Nepal as torches; the fragrant turpentine which it yields is employed in sacrifices and in medicated salves, and its wood is converted into rafters for houses.—*Smith's Five Years*, p. 67.

DHUL. Hind. A grass; grows in the marshes (jhil) of Cachar; and the grasses of the jungle are the khak, cekur, and tera.

DHULBHUM, called also Ghatsillah, a large pargana east of the Kolehan, attached to the Singbhum district, first colonized by the Bhumij. —*Dalton*, p. 156.

DHULIA, a civil and military station in Kandesh.

DHULI-BATTA, of Coorg. Literally, sweeping of the threshing-floor; a cess levied on land holdings.—*Glossary.*

DHUMKAR. Kulu. A woman's shawl or wrapper.

DHUMKURIA, among the non-Aryan tribes a hall for bachelors.

DHUN. Hind. Any low valley at the foot of a mountain, as the valley intervening between the true Himalaya and the Siwalik or outer hills is the Dehra-dhun, Jaswun-dhun, etc. The fixed gradations of true Himalaya, viz. dhun or valleys, sandstone or Siwalik range, 'bhaver' or forest tracts, and lowest of all the Terai, which consists of arid tracts or else swamps at the foot of the mountains, which are so constant and marked in the central Himalaya, are not observable at all in the Panjab.

DHUNA. Hind. Small cups made out of leaves by the Dosali.

DHUNA or Jhoona, a resinous gum obtained

from the Vatica robusta by making incisions in the stem of the tree, from which the resin exudes.

DHUNCHEE, the Dunicha or Dhuncha of Bengal, is cultivated for its fibres, which are made into ropes and nets. It is the Sesbania aculeata, *Persoon*. For its culture, the soil is generally low and wet, and not requiring much preparation, as the plant is hardy, growing from six to ten feet, and rapid in growth. It is considered a meliorating crop. The sowing is when the soil has been moistened by the first showers of April or May. About thirty pounds of seed are allowed to the acre, and less weeding is required than for jute. The crop is ready to cut in September and October, though the fibre does not suffer, if left standing till the seed is ripe, in November. The process of steeping and cleaning the fibre is similar to that required for sunn, which is Crotalaria juncea. The general produce of an acre is from one hundred to one thousand pounds of fibre, the current price somewhat less than that of pat, viz. Corchorus olitorius and C. capsularis. The expense of cultivation, including land rent, is about nine rupees. The fibres are long (six to seven feet), but coarser and more harsh than those of hemp, unless cut at a very early period. From its great strength, it is well calculated for the manufacture of cordage and cables. In Bengal, the fishermen make drag-ropes to their nets of this fibre, on account of its strength, and durability in water. Indeed, by the Bengalese it is considered more durable in water than either sunn or pat. It is really a very excellent fibre for common cord and twine purposes, and certainly very much superior in strength and durability to jute. It is also a much hardier plant than jute; the latter, indeed, being rather an uncertain crop for the production of the fine long silky fibre so much called for in England. Though rather wiry, it is strong, and remarkable for its contraction when wetted,—so much so, that it would even carry away the mainmast of a ship by mere contraction. Mr. Deneef, a Belgian farmer employed in India, presented samples of the Bengal hemp, called dhuncha, to the Agri-Horticultural Society in November 1840, and stated that they had been dressed after the Belgian mode. A bigha, he says, will yield 173 lbs. of cleaned fibre, and 92 lbs. of seed. A woman can dress about 4 lbs. a day. In April 1851, Captain Thomson presented a dressed sample of the fibre of the dhuncha of Bengal, and a piece of rope made of it. This rope, he stated, had been used in various ways for nearly two years, and, from various reports upon it, he thought it likely to come into extensive use. In the arsenal of Fort William, a three and a half inch rope of dhunchee broke with not less than 75 cwt., though the Government proof required for such rope was only 49 cwt. The price of the dhunchee in the interior has long been about Rs. 18 per maund. Dr. Royle thought it would probably fetch from £30 to £35 a ton, and, after being introduced and known, perhaps £5 more. It was also valued by others at £35 in 1853.—*Royle, Fib. Pl.* p. 293.

DHUND. HIND. A monumental mound. Beesil-Deo, a contemporary of Jeypal, the Tuar king of Dehli, lived about A.D. 1032-1096. He seems to have become a convert to Mahomedanism. But, for his subsequent expiation of this crime, he is represented in the garb of a penitent; and the mound (dhund) where he took up his abode still exists at Kalik Jobnair, and is called after him, Beesil-ka-dhund.—*Rajasthan*, ii. p. 454.

DHUNDHUMARA, a king of Oudh of the Solar line, properly called Kuvalayaswa, but termed Dhundhumara, from slaying a demon named Dhundhu, who annoyed the saint Uttanka.

DHUNDI. HIND. An agricultural tribe of Mahomedans in the Multan division, on the banks of the Sutlej.

DHUNIA, the lowest caste in the Himalaya, who employ themselves as gold-washers, cotton-carders.

DHUNJEBHOY FRAMJEE, a learned Parsee of Bombay, author of a Zend and English and Zend and Gujerati dictionary. At the commencement of the work is a comparative table of the Zend alphabet, with those of the Persian, Pehlvi, Hebrew, Cuneiform, Sanskrit, Gujerati, Greek and Roman languages. The second plate contains a comparison of the Zend orthography according to the different systems of sixteen Asiatic and European orientalists. Preliminary Discourse on the Origin and Authenticity of the Zend Language and Zendavesta. The Pehlvi Alphabets, published with observations on the Lapidary, Cursive, and Numismatic Pehlvi Writings, Tablets, Manuscripts, and Coins.

DHU NUWAZ was the surname of Yusuf, a king of Yemen, who, having, like some of his predecessors, embraced Judaism, terribly persecuted all who would not do so likewise. He put them to death by various tortures, the most common of which was throwing them into a glowing pit of fire, whence he had the opprobrious appellation of the 'Lord of the Pit.' This persecution is mentioned in the Koran, chapter 85. Dhu Nuwaz reigned till about 70 years before Mahomed, and was defeated by a force sent from Abyssinia, and slain.

DHUP or Dhupri. HIND. Juniperus excelsa, incense. J. communis, Chalei ke dhup; J. excelsa, Jari dhup, Dhupa. The word is also applied to many fragrant things used for burning, as incense offered to idols, *e.g.* to the root of Dolomiaea macrocephala, to juniper or to benzoin, to Juniperus excelsa, J. arborea, pencil cedar.

DHURGONTEE. In the time of Akbar, Dhurgontee, queen of Gurha Mundala, ruled over the Saugor and Nerbadda territories, and the greater part of Berar. She was a daughter of the reigning Chundal prince of Mahoba. He gave his daughter only on condition that the Gond prince who demanded her should, to save his character, come with an army of 50,000 men to take her. He did so, and, nothing loth, Dhurgontee departed to reign over a country where her name is now more revered than that of any other sovereign it has ever had. She was killed about the end of the 16th century, about 12 miles from Jubbulpur, while gallantly leading on her troops in their third and last attempt to stem the torrent of Mahomedan invasion. Her tomb is still to be seen where she fell, in a narrow defile between two hills, and a pair of large rounded stones which stand near are, according to popular belief, her royal drums turned into stone, which in the dead of the night are still heard resounding through the woods, and calling the spirits of her warriors from their thousand graves around her. The travellers who pass this solitary spot respect-

fully place upon the tomb the prettiest specimen they can find of the crystals which abound in the neighbourhood.—*Sleeman's Rambles*, p. 254; *Journ. As. Soc. of Bengal*, p. 213.

DHURJATI, a title of Siva or Mahadeva. The term means, He who weareth his hair bound about his head in the form of a tiara, in which style it is worn by the Jogi or Sanyasi devotees and other adherents of Siva.

DHUS, HIND., was an expedient to hasten the compliance of a demand from a dependent. A party of horse proceeds to the township, and are commanded to receive so much per day till the exaction is complied with. If the dhus is refused, it is considered tantamount to an appeal to arms. —*Rajasthan*, ii. p. 413.

DHUSAR, a tribe in Benares who came originally from Dehli. They cultivate a peculiar strain or measure of music, in which they are unsurpassed. The Dhusar rigidly maintain the purity of their order, and the performance of Hindu ceremonies and duties, and neither eat meat nor drink any kind of spirit.—*Sherring's Tribes.*

DIHYA. HIND. In the Central Provinces the squatter cuts down and burns the trees, and sows seed among the ashes, usually abandoning the place after three crops, and repeating the process at another place. It is the Kumri cultivation of the south of the Peninsula.

DIHYANA. SINGH. From Dhvoi, to think. Religious meditation, mental abstraction, a Buddhist and Hindu practice. Ward says, in this act of devotion the worshipper of Siva, for instance, closes his eyes, places his arms before him, and, repeating the names of the god, ruminates thus:—His colour is like a mountain of silver, etc. Dhyani or Anupapadaka, are celestial Buddha saints. Dhyani Bodhisatwa, authors of creation.—*Ward's Hindus*, ii. p. 67.

DIHYE. HIND. Sour milk, the Yaoort of the Turk races, and Sauer Milch of the Germans. It is used in all Asiatic and European countries, except in England. Every native of India, Hindu and Mahomedan, eats dhye, plain with rice or bread, and in all sorts of cookery, both vegetarian and otherwise. It is made of several degrees of sourness, to suit the taste of customers. Boiling milk is poured into a porous earthenware vessel, the inside of which has been rubbed with a portion of the previous day's sour milk. It sets immediately. It much resembles butter milk.

DI, Doi, Ti, Thi, Tsi, Tui, in several of the ancient tongues of India, mean water, as in the rivers Rapti, Tapti, Kampti, Yang-tse-kiang, Goomti. Di, in Assamese and in Cachar, water; hence the names of their rivers, Dihong, Dibing, Digaro, Dihang. Da in Damodar has the same meaning; and the Brahmaputra is called Doima, the river mother. The Dihong is generally regarded as the continuation of the Tsan Pu, and with the two Dihing rivers, makes the Brahmaputra river. These two are called the Noa Dihing and the Buri Dihing. The Dihong is supposed to pierce through the Abor hills.—*Dalton, Ethnology of Bengal*, p. 87.

DIACOPE, a genus of fishes belonging to the section Acanthopterygii and family Percidæ. Many large and beautiful species inhabit the Indian seas. D. octolineata, a very beautiful species, caught off the coast of the Mauritius, is of a brilliant reddish-yellow colour, shaded into white on the belly, and is adorned with four longitudinal blue stripes on each side of the body; these stripes are margined with black. It is about 10 inches in length. Some of the species attain the length of 3 feet and upwards.—*Eng. Cyc.* p. 323.

DIALIUM OVOIDEUM. *Thw.* Gal-seyembala, SINGH. A valuable timber tree of Ceylon, north of Kandy. The wood is strong and handsome, and well adapted for ornamental furniture; the fruit has an agreeable acid flavour, and is sold in the bazars.—*Beddome, Fl. Sylv.*

DIAMACHUS, an ambassador from the Greeks of Babylon to Mitragupta, son of Chandragupta. Mitragupta was known to the Greeks by the name of Alletro Chidas. Diamachus was the next Greek ambassador after Megasthenes.—*Cal. Rev.* 1868.

DIAMER PEAK, or Nanga Parbat, in lat. 35° 14′ 4″ N., and long. 74° 34′ 5″ E., in Hasora. Top of the peak is 26,629 feet above the sea. This peak, the highest in Hasora, is situated close to the remarkable bend made by the Indus.

DIAMOND.

Almas, AR., PERS., RUS.	Kamala, Kumala, MALAY.
Kin-kang-shi, . . CHIN.	Intan, ... ,,
Jahalom, ... HEB.	Mass, ... PERS.
Hira, . . . GUJ., HIND.	Virum vachira kallu, TAM.

The diamond is a crystallized mineral. On account of its lustre and hardness, it is reckoned the most valuable of all precious stones. The form is cubical, frequently in twin crystals, cleavage highly perfect, rarely massive. The bulk of the forms are those of the octahedron, an octahedron having six planes on the edges, or a dodecahedron with rhombic faces. Lustre brilliant adamantine. Colour white or colourless, occasionally with tints of blue, yellow, red, orange, green, brown, or black. Transparent to translucent when dark-coloured. Fracture conchoidal, H. 10, sp. gr. 3·5295 to 3·55. Exhibits vitreous electricity when rubbed. Index of refraction, 2·439. Becomes phosphorescent on exposure to light, and the smaller diamonds become phosphorescent by a much shorter exposure than required for those of a larger size. The diamond is carbon in its purest form, and its combustibility was ascertained by the Tuscan philosophers. About 30 per cent. of diamonds are under half a carat, and one in a thousand may be above 24 carats. Diamonds have been obtained in India, from very ancient times. Ptolemy's Geography, said to have been composed sixty years after the time of Pliny, mentions the diamonds found on the banks of the Sumbulpore river; also speaks of Arcati (the capital of the Soræ or Sora-mandalum, from whence corruptly Coromandel), Mesolia (the district which contains Masulipatam), and the river Cauvery under the name of Chabaris. Rennell supposes Punnah in Bundelkhand to be the Panassa of Ptolemy, and quotes the Ayin-i-Akbari as naming Biragur on the west of Boad near the Mahanadi river, adding that there is indeed a mine of more modern date in the vicinity of Sumbulpore. Ptolemy's Adamas river answers perfectly to the Mahanadi; and the district of Sabaræ, on its banks, is said by him to abound in diamonds. Tavernier visited the Raolconda diamond mines at the confluence of the Kistna and Bhima rivers, which were also noticed by Cæsar Frederick; and both Tavernier

and Rennell notice the diamond mines of the Pennar river, and near Gandicotta, also those of Colore (Kulur?) on the south bank of the Kistna, not far from Condavir.

The diamond mines of the Peninsula of India and Central India lie between lat. 13° and 25° N. They occur in irregular arid patches, sometimes basin-shaped, in hilly districts on the great elevated plains bordering the more considerable rivers that have an easterly and southerly course to the Bay of Bengal. Diamonds of considerable size are not rarely found in the sands of these streams and of their tributaries; but their geognostic situs must be referred to the sandstone and sandstone conglomerates at Ovalumpilly; Condapettah, in the Chinoor taluk on the banks of the Pennar, about 6 miles from Cuddapah; at Lamdur and Panchatgapadu; at Banaganapilly on the Kurnool frontier; at Ramulucottah and other places in Kurnool, and at Munimadagoo, north of Ghooty.

Further to the north and east diamonds are found on the banks of the Kistna, in the vicinity of Condapilly, in a plain formed by the alluvium of the river. Still further north, in the bed and alluvium of the Mahanadi river, especially at Sumbulpore, and about the mouths of the Hebe, Khelu, and Maund streams. Diamonds are also found in the bed of the Godavery about Badrachellum.

To the north-west of the districts here noticed, are the diamond mines of Punnah in Bundelkhand. They occur in a table-land covered by a reddish soil, which lies over a bed of rolled pebbles of the sandstone formation, in which the diamonds are found.

The Kurnool geological formation of the modern geologists occupies all the low ground of the Khundair valley, in the middle of the basin, and another large space in the Palnad. It consists of shales, limestones, quartzites, and, lowest of all, sandstones.

The Banaganapilly sandstone of the Kurnool formation is 10 to 20 feet thick, and is the only rock of that region in which the diamond is known to be found. Diggings are carried on in many parts of the country on or near the Kurnool formation, but mostly in the superficial gravels. At Banaganapilly, however, there have been extensive workings in the bottom sandstone. Shallow pits, not more than 15 feet deep, are sunk in the sandstone, and short galleries driven in the diamond layer, which must be at the very base of the group, or close to the bottom bed. In this locality the workings of the diamond miners are crowded over particular spots, whilst large areas adjoining, of the very same deposits, are left untouched. If this irregular working be only due to some delusion of the diamond seekers, a large field still awaits exploration. The Cuddapah geological formation has four great groups, called the Krishna, Nullamallay, Cheyair, and Pampugni groups. These consist of slates and quartzites. The Cuddapah basin is about 210 miles long, and of a crescent shape. Its N.E. horn is the Palnad, and reaches to Juggiapet, a few miles N. of the Krishna river, an area of 13,500 square miles. More than a third of the area is taken up by the overlying Kurnool formation.

The *Banaganapilly* district is about 30 miles long from N. to S., and 26 in breadth from E. to W., lying between lat. 15° and 16° N. in the centre of the Ceded Districts. Its E. and S. part consists of a fertile plain of the regur or cotton soil, bounded on its N. and S. aspects by detached ridges of hills of clayslate and sandstone, which run from Kurnool towards Ghooty, Cuddapah, and Tripati, and terminate at Naggeri, N.W. of Madras. The Banaganapilly diamond mines are situated in and near a low range of hills about half a mile from the town. The diamond mines near Cuddapah are about 7 miles N.E. from the town, on both banks of the Pennar river, where this washes the foot of a range of hills. The mines at Cuddapah have, it is said, been worked for several hundred years with various success. In the Chinnur taluk, in which Cuddapah is the largest town, there are two places, called Condapetta and Ovalumpilly, where diamonds occur. In the next taluk on the west side of this, diamonds are dug at Lamdur and Panchatgapadu. Several mines exist near Ghooty.

The *Ovalumpilly* mines are on the west side of the river, about 6 miles from Cuddapah, and 3 miles from the Kanaperty mines. They are situated on a gentle ascent, about half a mile from the Pennar, in a well-cultivated country, and within a very short distance of three villages. They are chiefly on ground belonging to Ovalumpilly.

In the mines at Cuddapah, the uppermost stratum consists of sand or gravel, mixed with a small proportion of loam. Its thickness scarcely exceeds a foot and a half. Immediately under it is a bed of stiff bluish or black mud, similar to what is seen in places that have been inundated. It is about 4 feet thick, and contains no stones. The diamond bed comes next, and is easily distinguished from the incumbent bed, by the great number of large rounded stones which it contains. It is about 2 or 2½ feet thick, and is composed of large round stones, pebbles, and gravel, cemented together by clay; in the dry seasons, it is as dry as the bed which lies immediately above.

At *Ramalcottah*, about 20 miles from Kurnool, are many diamond pits in small ferruginous gravel. Iron ore, red hematite, occurs in all the hills in the neighbourhood of Ramalcottah. There are also diamond mines at Munimadagu, and Wudjar Karur near Ghooty; and during the Mahomedan rule diamonds were dug in the Sidhout Hills, a continuation of the Nullamallay range, and also near the village of Durjipilly. Diamond mines occur at Naikenabad Mullamarum, near Timmericottah, and in the bed of the Kistna river near Nagajurecondah.

Sandstone conglomerate extends eastwards from Banaganapilly to Condapilly and Mallavelly, in all which localities diamonds are found.

Mallavelly, a village 16 miles W.S.W. of Ellore, is one of seven villages near which diamond mines exist. The names of the other six villages in which diamonds are found are Gani Partala or Partial, Atkur, Burthenypada, Pertalla, Wustapilly, and Kodavetty Kallu. At Mallavelly, the hollow flat where the diamond pits are excavated is a low swampy plain. Being surrounded by a bank or rising of the soil in a circular manner, it has the appearance of having been once a lake. The banks are formed of the red ferruginous sandy soil prevailing all round this place. The diamond pits are in general

excavated at the north end of the bank that surrounds the hollow. The deepest could not be more than 12 feet, and they never came to a hard mass of rock.

Partial is about 50 miles from Masulipatam, but the diamonds were of small size, and the searchers did not earn 4 or 5 rupees a month. In the northern diamond mines, particularly those of Partial, Dr. Heynes found in the diamond bed a great number of fine chalcedony and cornelian pebbles and garnets. The larger stones formed the greatest part of the diamond bed.

The district of the diamond mines of *Golconda* was ceded to the Nizam by the British under a special treaty, but is enclosed by British territory. Diamond mines not far from *Condapilly* are constantly worked. There are none found at Golconda, or in the Golconda district, but they were formerly cut and polished there.

The diamond washings of the *Mahanadi*, a little above Sumbulpore, are exclusively from alluvial diggings; but the fact that they occur just outside and below the great lower Vindhyan basin, has suggested the conjecture that the gems are derived from those rocks, on the ground that these are the equivalents of the diamond-bearing beds of Southern India. The Joorah, who are fishermen by caste, are the diamond searchers of the Mahanadi, at a place called Heeracode, near Chanderpore, adjacent to the place where the river Mand joins the Mahanadi. The river here makes a sudden turn to the left, where, amongst the smaller streams, which they dam up for a time, the diamonds are searched for during the hot season, generally commencing at the termination of the monsoon. The men throw the sand on the bank, and the women wash and expose it to the sun and select the diamonds.

In the main *Vindhyan basin*, diamonds are only known to occur in the Upper Vindhyans. Here, as everywhere, the great majority of the diggings are alluvial, but the principal workings are in a bed at the very base of the Rewa shales. Notwithstanding the immense range of this group, it is only known to be productive within a small area of the Panna State, on the borders of the Bundelkhand gneiss, and the surface diggings are confined to the same neighbourhood. Here, as in the Banaganapilly mines, the diamond-layer is conglomeratic.

A notice of the *Pannah* mines is in Dalrymple's Indian Repertory (ii. p. 471), and there described as on a range of hills situated about 42 coss S.S.W. of Kalpi. The hills are called by the natives Band Achil; they extend about 12 coss in length and about 2 or 3 in breadth, and are divided into 21 districts, of which only the following nineteen names are given:—Pirnah, Gurriah, Anwont Pokennu, Channu, Birdu, Kalliapur, Pullu, Raipur, Etawa, Maharajpur, Rajpur, Kimmerah, Gadahsiah, Ranpur, Cherriapuri, Attupurah, Merah, Singupurah, and Mujiguah. Diamonds are found in all these districts, but those of Maharajpur, Rajpur, Kimmerah, and Gadahsiah are the largest and best.

In the *Bundelkhand* area, a cherty contact rock coats the gneiss under the Kaimur sandstone; and in Chattarkot hill the contact rock occurs under the limestone, holding its position as a true bottom rock. It has been conjectured that this peculiar contact rock may possibly be an original nidus of the diamond. A common form of it is a semi-vitreous sandstone. Large pebbles of it are very abundant in the conglomerate diamond bed of the Rewa shales at the Panna mines, and are said to be broken up in the search for diamonds. The search for diamonds in Panna is not, however, confined to positions in which the gems could be derived from any existing outcrop of the Rewa shales. There are numerous pits of surface diggings in the gorges and on the slope of the Upper Rewa sandstone, south of Panna.

The *Chinese Shan-tung* diamonds are mostly very minute, varying in size from a millet seed to a pin's head, though occasionally larger ones are met with. Men with thick straw shoes on, walk about in the sands of the valleys and streams of the diamond mountains of Chin-kang-ling, some 15 miles S.E. of Yi-chow-foo. The shoes are burnt, the diamonds being searched for in the ashes. As in the case with amethysts and rock-crystal in the Lao-shan, the priests in the temples in the Chin-kang-ling are the principal dealers in these small diamonds. From them they are bought by glaziers at the large fairs held every year at Chu-chow, Lai-chow-foo, and Hwang-hsien.

The diamond has been found in *Borneo*, in the district of Landak, in the territory of Pontianak, in long. 109° E., about 40 miles N. of the equator, and they occur from thence as far as Banjarmasin, between long. 114° and 115° E. The mines are worked by the Dyak, Malay, and Chinese. The gems are found in a yellow-coloured rubble or gravel, which occurs at various depths, the greatest to which a shaft has been known to be sunk being between 50 and 60 feet. Six different alluvial strata occur before reaching the diamond-yielding one, which the Malays call the areng. These strata are, a black mould, a yellow sandy clay, a red clay, a blue clay, a blue clay intermixed with gravel, called by the Malays ampir, or near at hand, and lastly a stiff yellow clay, in which the diamonds are embedded. The prince of Matan has a rough diamond of 367 carats, but its genuineness has been suspected. It was found in 1787 at Landak.

The first *South African* diamond was found in 1867. A little girl was playing with it on the floor of a house in Albania, Griqualand West. Soon afterwards the Star of South Africa, weighing 83 carats, was found. The Porten-Rhodes diamond was found in the Kimberley mine, 12th February 1880. It weighed 150 carats uncut, and £60,000 had been offered for it. Kimberley mine is the richest there. It has an area of about 7 acres, and its first owner sold it for £6000; but in 1880 it was yielding £20,000 to £25,000 in rents, for about 400 claims.

After the Star of the South of Africa, a diamond was found in 1872 which weighed 288½ carats. In 1880 the gross weight of packages passed through the Kimberley post office was 1440 lbs. 12 oz. avoirdupois, the estimated value being £336,897. At the end of the year, 22,000 blacks and 1700 white men were employed in the Kimberley division mines.

The *Du Toit* diamond was found in 1878 at Du Toit's pan. It has been cut, and weighs 244 carats. It is the largest cut diamond.

Large diamonds are usually heirlooms in great families, and almost every royal house in Europe has one or more celebrated gems.

The *Court of Holland* has one of a conical shape, valued at £10,368.

The buttons of the silk stole of King Joseph I. of *Portugal* were each a fine brilliant worth about £5000, or, in the aggregate of twenty, £100,000.

George IV. of Britain purchased a magnificent brilliant of a blue colour, which formed the chief ornament of the crown at his coronation. It cost £20,000.

The *Pigot Diamond*, brought to England by Earl Pigot, on his return from the Governor-Generalship of India, was disposed of in 1801 by lottery for £30,000. It afterwards passed into the hands of one of the Portuguese princes. It weighs 49 carats, and is valued at £40,000.

In the *Crown Jewels of France* there was a rich brilliant of a sky-blue colour. It weighs 67 carats and 2-16ths, and is valued at £40,000.

The *Maximilian Diamond* of the Austrian royal family is of a yellow colour, and rose-cut. It has been rated at 139½ carats, and valued at £155,682.

The *Sanci Diamond* originally belonged to an Eastern merchant, from whose hands it passed into those of Charles the Bold of Burgundy. Charles wore it in his cap at the battle of Nancy in 1475, where he was killed. A Swiss mercenary found the gem, and sold it to a priest for a florin, about twenty pence of British money. The priest sold it again for about 2s. 6d. After this it came into the hands of Antonia, king of Portugal, who pledged it to a gentleman named De Sanci for 40,000 francs, and afterwards, being unable to redeem it, he sold it to the same gentleman for 100,000 francs. A descendant of this gentleman, having occasion to deposit the family jewel with the Federal Government of Switzerland, entrusted it to the care of a faithful servant for that purpose. The servant disappeared for a long time, but so confident was De Sanci of his honesty, that he caused search to be made in his track, and found him at last murdered and half buried. In his stomach was found the brilliant, he having swallowed it to preserve it for his master!

The *Russian Diamond* is in the crown of Russia. Some Indian had placed it in the socket of an idol's eye. An Irish soldier gouged out the optic. After going through many adventures, it was sold by Count Orloff to the Empress Catharine in 1775 for £90,000 in present money, an annuity of £4000, and a patent of nobility. It is of the size of a pigeon's egg, and of a flat oval form. It weighs 179 carats, or 716 grains, and is without a flaw. Besides this stone, there is a stone among the Russian crown jewels valued at £369,800.

The *Pitt Diamond.*—Mr. Pitt, the grandfather of the Right Hon. William Pitt, when Governor of Madras, purchased a diamond from a native for £12,500. When re-cut it was worth twelve times the money, and weighs 136¾ carats. The small laminæ, shreds, and cuttings from it were valued at £8000. It was purchased in 1717 by the Duke of Orleans for £135,000, and in the negotiations £5000 were expended. In 1791 a commission of jewellers valued the stone at twelve millions of francs, or nearly £500,000 sterling. Its original weight was 410 carats.

The *Persian Court* possesses the Sea of Glory and the Mountain of Light, the one valued at £145,000, and the other at £31,848.

The *Nizam* or *Hyderabad Diamond* belongs to the Nawab of Hyderabad. It measures 2·48 inches in length by 1·35 inches in breadth, and ⅞ths of an inch in thickness, in the rough state. The gem was found in the mud wall of a native house, and was purchased for the Nizam. A child was playing with it as a stone, and on eight annas being offered for it, its value was ascertained. A small portion of the gem had been broken off one end before it was offered for sale. It weighs 1108 grains, nearly 277 carats (another authority says 340 carats).

The *Moghul Diamond* was described by Tavernier. He says: 'The water (of it) is perfection, and it weighs 319½ ratis, which are equal to 280 of our carats, the rati being seven-eighths of a carat. When Mirimgola, who betrayed the king of Golconda, his master, made a gift of this stone to Shah Jahan, from whom it descended, it was uncut, and weighed 900 ratis, which are equal to 787½ carats, and it had many flaws. If this stone had been in Europe, it would have been differently treated, for some good pieces would have been taken from it, and the stone left much larger; as it is, it has been almost polished away. It was a Venetian (Hortensio Borgio) who cut it, for which he was badly paid. They reproached him for having spoilt the stone, which ought to have remained heavier, and instead of paying him, the emperor made him pay a fine of Rs.10,000, and would have taken still more if he had possessed it. If the Venetian had known his work better, he might have taken some good pieces off, without doing injury to the king, and without having expended so much trouble in polishing it, but he was not a very accomplished diamond-cutter.' That Moghul diamond cannot now be traced. Many believe that the Orloff diamond and a stone now in Persia were cleaved from the Great Moghul.

The *Koh-i-Nur Diamond* belongs to Queen Victoria, Empress of India. When Shah Shuja was driven from Kabul, he became the nominal guest and actual prisoner of Ranjit Singh, who spared no means to obtain possession of this precious gem. In this he succeeded in 1813. After the death of Ranjit, it was occasionally worn by Kurruk Singh and Sher Singh. After the murder of the latter, it remained in the Lahore treasury until the supersession of Dhulip Singh and the annexation of the Panjab by the British. Upon the annexation of the Panjab, it was stipulated that the Koh-i-Nur should be surrendered to the Queen of Great Britain. It arrived in London on the 30th June 1850, and on the 3d July was presented to the Queen. It then weighed 186 carats, and looked like a very precious gem. It was cut by M. Voorsanger of Amsterdam, at a cost of £8000. It was placed on the mill by the Duke of Wellington on July 16th, 1852, to be cut, and was completely finished on September 7th, having taken thirty-eight days to cut, working for twelve hours per day without cessation. It was reduced to 106⅛ carats, and is valued at £100,000. It is a greyish stone, and, as jewellers say, too much spread, and was so very difficult to manage as to require to be twice cut. It has been suggested to be the Moghul diamond, but Tavernier states the weight of that at 280 carats, and the Koh-i-Nur had only 186 before cutting.

The *Brazil Diamond*, called also the Great Braganza, the largest diamond known, belongs to the house of Braganza. When Dom John of Portugal (afterwards John VI.) arrived at the Brazils in

1808, a negro conveyed a letter to him, in which he professed an ardent desire to present, in person, a large diamond which he had found. The regent granted him an escort, and the negro arrived and presented the stone. It is like a darkish-yellow pebble, kidney-shaped and oblong, about the size of a pullet's egg. Its weight is over 11 ounces, or 1680 carats. The Brazilian jewellers (Romé Delisle) value it at three thousand millions of crusades, or £300,000,000! but it is believed to be a white topaz.

The *Star of the South of America*, a stone of singular beauty, was found by a negress in Brazil in 1853. It weighed 254 carats, but has been cut down to 125. It was sold for £3000, but £80,000 were since realized for it from the Gaekwar of Baroda.

The diamonds of India are classed by native jewellers as white, yellow, red, green, and black; the coloured ones are extremely rare, but they are occasionally found of a white colour spotted with red, which are rejected as bad. They are classed by the northern native jewellers into three kinds, —Hira-ba-rang-i-nausadir, greyish, or the colour of sal-ammoniac; Hira makduni, of paler colour; and Almas-i-hadidi. Hindus distinguish four kinds of diamond, differing from each other in beauty and value, called, 1. Brahma, 2. Kshatriya, 3. Vaisya, and 4. Sudra,—names derived from the castes in which the Hindus are arranged. The Brahma diamond is described as of the colour of clear milk; the Kshatriya, of clear honey; the Vaisya, of cream; and the Sudra, of a smoky greyish white.

Diamonds in the rough are unattractive pebbles. Even with those who profess to be acquainted with precious stones, the white sapphire and topaz occasionally pass for the diamond. Some of the Ceylon diamonds which the Singhalese offer for sale are made of rock-crystal. The art of cutting diamonds is practised to some extent in India. A knowledge of this art, however, is not very common, as may be concluded when we mention that all Europe only possesses, in Amsterdam, one great diamond-cutting establishment, filled by workmen of the Jewish race, and in London another. The diamonds seen in such abundance amongst the wealthy natives of India are almost all cut in Europe.

Diamond-cutting is effected by a horizontal iron plate of about ten inches in diameter, called a schiff or mill, which revolves from 2000 to 3000 times per minute. The diamond is fixed in a ball of pewter, at the end of an arm, resting upon the table in which the plate revolves; the other end, at which the ball containing the diamond is fixed, is pressed upon the wheel by iron weights at the discretion of the workman. The diamond is cut by taking advantage of its cleavage, and also by abrasion with its own powder, and by friction with another diamond. It is a process of great labour, and many hours are spent in producing a single facet. They are cut into various forms, called the brilliant, the rose, and the table. The *brilliant* (brilliolette or briolette) form shows the gem to the best advantage, and is always set with the table upwards. In the *rose* the entire surface is covered with equilateral triangles, terminating in a sharp point at the summit. This form is used when the spread of surface is too great for its depth, and it could not be cut into the brilliant form without great loss. The *table* is applied to such diamonds as may be regarded as plates, laminæ, or slabs of small depth compared to their superficial extent. The brilliant and the rose lose in cutting and polishing somewhat less than half the weight. In the formation of either a brilliant or rose diamond, so much is cut away that the weight of the polished gem is not more than half that of the rough crystal out of which it was formed. They were usually cut in the rose pattern till the middle of the 18th century; but roses are, in general, only now used where the space in the setting prohibits the introduction of the brilliant form, brilliants being at present universally worn. The double cut brilliant is at present the common form. Diamonds were first cut in Europe in 1456 by Louis Berquen, a citizen of Bruges.

According to Jaffries, the value of diamonds is in the duplicate ratio of their weights. Thus, if an uncut diamond of one carat be worth £2, that of one cut and polished would be valued at £8 sterling in the brilliant. A carat weighs four nominal grains, or 3·166 grains troy. At this rate a cut diamond of two carats would be $2\times8\times2=$ £32; one of three, $3\times8\times3=$£72; one of four, $4\times8\times4=$£128; and one of five, $5\times8\times5=$£200. The rose diamond is of inferior value, but has been rated at £4 the carat when polished. For the purpose of estimating diamonds of inconsiderable size, the jeweller employs a gauge, in the handle of which are embedded small crystals of various relative sizes, from $\frac{1}{16}$th to $\frac{1}{4}$th of a carat, and a comparison is therewith made when there are numbers of various minute sizes. The rough diamond is called bort; and points are those small fragments with naturally acute angles which are set in glaziers' cutting diamonds, and sell at £10 the carat.

Most precious stones will scratch, but diamonds alone cut glass. It is also employed for the lenses of microscopes. It has but little chromatic aberration, but the frequent irregularity of its structure is a drawback to its employment for this purpose.

There seems to have always been a considerable traffic in this precious stone, carried on by the mercantile body on the east coast of peninsular India. In Madras, up to about the year 1840, what may be called the country transactions with England were conducted through European firms. The diamonds exported by them consisted of the small uncut stones, which were sent to London in packets called bulses; and the mercantile character of the Messrs. de Fries of Madras stood so high in the London market, that their packets or bulses were sold there by weight without examination. Latterly, however, the export trade fell into the hands of the native community, amongst whom there is a considerable tendency to speculate on prices. The course of trade has thus been somewhat changed. Prices have risen at least 20 per cent.; and if Europeans do now engage in the business, it is chiefly in importing from London. — *Tavernier's Travels*, pp. 135–149; *Sir S. Raffles' Hist. of Java; Low's Sarawak; Rennell's Memoir*, pp. 233–290; *Pennant's Hindustan; Heyne's Tracts; Captain Cullen; Lt. Newbold; Dalrymple's Repository; Voysey's Journal; Dana, Manual of Mineralogy; Catalogue of Great Exhibition of* 1851 (Class xxiii.); *Eng. Cyc.* p. 323; *Ainslie's Materia Medica; Mason's Tenasser*

Powell's Handbook; Tomlinson, p. 309; *Mr. Tennant in Illustrated London News*, 31st January 1852; *Crawfurd's Dict.* p. 120; *Medlicott, Blanford, and Ball, Geology of India.*

DIAMOND CANING, a mode of using coloured rattans for caning the bottoms of chairs, etc., by boring the holes and putting on a first layer of rattan stripes, and a cross layer to form the diamond figures, ornamented with colours, and gilded. The colours are used, in powder, mixed with copal varnish, and the gold leaf is applied over a coat of gold size. It has a splendid effect, and is very durable.

DIANA of the Ephesians is the counterpart of the Hindu Kali. Diana of the Greeks is represented in Hindu mythology by Atavi Devi.

DIANTHUS, a genus of flowering plants cultivated in gardens. D. caryophyllus, or clove pink, clove flower, and D. Chinensis are called Karnphul; the latter is of various colours.

Dianthus caryophyllus, Ts'ien-chun-lo, CHIN.; its long dried stalks are made into brooms.

Dianthus Fischeri, Ku-mch, CHIN., and Shih-shuh, CHIN., grows all over China.

DIAPER.

Drel, ... DUT.	Tela tessuta a opere, . IT.
Linge ouvre, . . . FR.	Salfetotaschnoe, RUS.
Drell, ... GER.	Mantelea alemaniscas, SP.

A fine flowered linen, used for tablecloths and napkins, manufactured in the north of Ireland, Germany, and Scotland. Diapers are also made of cotton, in imitation of the linen goods bearing the same name. The shot diaper of Masulipatam, so made that it is difficult to ascertain whether it be not shot with silk, is a cotton fabric, excellent in quality and colour.—*M. Ex. Jur. Reports.*

DIAR of Hazara, Cedrus deodara, *Loud.*

DIARBAKAR, a pashalik of Asiatic Turkey, between lat. 37° 28′ and 39° 30′ N., and long. 38° 30′ and 42° 10′ E. Its people occupy 2702 villages and towns, and many dwell in tents. They are Arabs, Kurds, 588,540; Christians, 129,990; Yezdi, 9804; and Kazzilbash, 15,006. The Christians are of the Armenian, Catholic, and Greek Churches. Diarbakar town is on the banks of the river Tigris. In its prosperity it contained 40,000 houses, with numerous cotton looms constantly at work. The Diarbakar branch of the Tigris passes by Rodwan and Hasan Keif, before it joins the Tigris proper. The Mahallemi Kurds live in caverns hereabouts, cut in the cliffs of the Tigris. There is a prodigious number of these caves, which are said to be very ancient, and cut into different apartments. Altoon Soo, the river Caprus of antiquity, is called the Lesser Zab by Abulfeda. It joins the Tigris below Diarbakar, but it is an error to call the river Altoon, which is an epithet only belonging to the bridge, from what it cost, Altoon meaning gold or money.—*MacGregor; Rich's Kurdistan*, i. p. 379, ii. p. 13.

DIATOMACEÆ, the Hazani-Yusuf of the Panjab, is a minute silicious shell of a triangular form, one of the Diatomaceæ found floating on lakes and ponds in the hills of Kashmir, whence it is skimmed off and dried. It was erroneously described by Honigberger and others as a seed.—*Powell*, i. p. 384.

DIAZ. Bartholomew Diaz, in the reign of John II., king of Portugal, proceeded with three vessels to ascertain the southern boundary of the African continent, and, driven from the land near the south cape, he ultimately regained the African shores east of the cape, at a bay which they called the Bay of Cows. The men seeing the land trend easterly here, began to murmur, and compelled Diaz to return. As they shaped their course homewards, they rounded that famous point in August 1486, to which Diaz gave the name of 'Cabo Tormentoso' the Cape of Tempests, but which John, with more foresight as to the future importance of the discovery, changed to that of the Cape of Good Hope. Diaz was the first who, in recent times, doubled the Cape of Good Hope. He landed at Calicut about the beginning of the 16th century, soon after the discovery of America by Columbus. He was afterwards drowned in one of four ships lost by Cabral, in his voyage from Brazil to Calicut.—*Tennant's Ceylon.* See Albuquerque; Cabral; Debul; Vasco da Gama.

DIBARADANE or Dipartanai, or offering of fire, from Dipa, a lamp, and Aradana, to sacrifice, is a daily ceremony in honour of the Hindu gods, and makes the last part of the worship. The Brahman who officiates holds in one hand a small bell, which he sounds, and in the other a copper lamp full of ghi; he makes it pass and re-pass round the statue of the god he worships. During this time the dancing girls dance and sing his praises, after which the assistants, in contemplation, with hands joined, address their vows to the idol; the Brahman then breaks the garland with which the idol is adorned, distributes the fragments to the people, and receives from them the offerings they have brought to the divinity. The dance before the gods during divine service, and on festival days, was a ceremony much used by the ancients. The priests of Mars, called Sati, were held in great esteem by the Romans. They danced at Delos during divine service. This dance was performed in a very singular manner among the Greeks and the Romans: they moved from the left side of the altar to the right, meaning to intimate the course of the heavens, which moves from the east to the west; they then returned from the right side to the left side, which represented the motion of the planets. King David danced before the ark when brought back from the Philistines. We find in Exodus that the Jews danced before the golden calf; but there never has been a people like the Hindus, who choose girls of no virtue to dance before their idols.—*Sonnerat's Voyage*, pp. 157-59.

DIB-GRASS, the Anglo-Hindi name of several plants. In the Panjab it is the Cynodon dactylon, and there called Khabbal; on the banks of the Ravi it is the Typha angustifolia, and mats are made of it; in Sind it is the T. elephantina; in Hindustan it is the Poa cynosuroides. The Hariali, Cynodon dactylon, is the creeping grass which is collected for horses by the grass-cutters.

DIBROGARH, a district in the east end of the Assam valley, which produces coal.

DIBYA or Divya. SANSK. Divination; in Hindu law, the ordeal.

DIC, in Hindu astronomy, the four cardinal points of the compass. Asta dic, the eight principal points, including the cardinal ones. The Asta dic are called the eight corners of the world over each of which a divinity is supposed to preside.—*Warren's Kala Sanhita.* See Diepala.

DICE.

Taarlingen, . . . DUT.	Buwah pari; D'ad'o, MALAY
Dés (à jouer), . . . FR.	Kosti, ... RUS.
Würfel, ... GER.	Dados, ... SP.
Passe, ... HIND.	Tawla-zari, . . . TURK.
Dadi, ... IT.	

Those used in Europe are cubical pieces of ivory, bone, or ebony, marked with dots on each of their sides, from 1 to 6, according to the number of the face, and used for playing games of chance. Those used by the Hindus are oblong pieces of bone or ivory. The story of Draupadi being staked and lost by Yudishtra, the eldest of the Pandava, to Duryodhana, is equalled by one in Ainsworth's Old St. Paul's, and others in the History of England.—*Faulkner.*

DICHIT or Dikshit, a vernacular corruption for Dikshita, a name given to Brahmans, and the title of one of the sixteen branches of the Kanoujia Brahmans; it is also borne by some families of Mahratta Brahmans; and in Gazipur and adjacent provinces by a tribe of Rajputs.—*Wilson.*

DICHROSTACHYS CINEREA. *W. and A.*

Mimosa cinerea, *Linn.*	Acacia cinerea, *Sprong.*
Deshmanthus cinereus, *Willde.*	Acacia dalea, *Desv.*
	Caillea cinerea, *G. and P.*
Vurtuli, ... HIND.	Vadatala, ... TAM.
Andara-gass, . . SINGH.	Veluturu, Yel-tur, TEL.
Wara-tara, . . . TAM.	

A small scrubby tree or large shrub, abundant in the hot and drier parts of Ceylon, Coimbatore, and waste places of the inland country in the Bombay Presidency, Archipelago, and North Australia. Flowers showy. The wood is very hard, strong, and good for pegs.—*Drs. Wight, Gibson; Flor. Andh.; Thw. Zeyl.; Roxb.*

DICKSONIA BILLARDIERII. *F. von Mueller.*
Cibotium Billardierii, *Kaul.* | D. antarctica, *Labill.*

A tree-fern abundant in the humid forests of Tasmania, S.E. Australia, and New Zealand, attaining a height of 30 to 50 feet. It is one of the tallest of all the fern trees of the globe, and certainly also the most hardy, the vitality being fully retained for several months. This species occasionally occurs with a divided trunk. Round the circumference of its top no fewer than nineteen crowns have been counted, and within the circumference there must be half as many more. D. squarrosa is the most southern tree-fern in the world, native of New Zealand.—*Von Mueller; W. Archer.*

DICLIPTERA ROXBURGHII. *N. ab E.*

Somni of . . . BEAS.	Lakshmana of . PANJAB.
Kirch of . . JHELUM.	

A medicinal plant; grows up to 6500 feet in the Western Himalaya.—*Dr. J. L. Stewart.*

DICPALA, eight guardians of holy places worshipped in India. See Dic.

DICRANOCEPHALUS ADAMSI. *Pascoe.* A beetle of Corea, a double-helmeted coleoptera. It occurs also on the Himalayas.

DICRURIDÆ, a family of birds, comprising the genera Chibia, Chaptia, Bhringa, Edolius, Dicrurus. One of the genus Dicrurus is the drongo shrike of the Peninsula of India. Other species are D. cærulescens, D. leucopygia, and D. edoliformis. See Birds.

DID or Deed. PERS. A Sufi Mahomedan rite; the viewing or beholding of the deity, pointed out by the moorshid or teacher.

DI-DITSH, N'guon, Moi, Ro-moi, and Ke-moi, rude tribes occupying the mountain ranges between Tonkin and Cochin-China, and between Cochin-China and Kambogia.—*Latham's Ethnol.*

DIDYMOCARPUS, a genus of plants. Dr. Wight gives as species, D. Humboldtiana, lyrata, ovalifolia, Rottleriana, and tomentosa. D. aromaticus is stated by Dr. Wallich to be used as a perfume and aromatic drug, called by the natives Kumkuma and Rani Govindi.—*Royle*, p. 294; *O'Sh.*

DIEG. At this place a battle was fought and won by Lord Lake. See Battles.

DIEGO GARCIA, one of the Chagos Islands, is about 14 miles long, and extends from lat. 7° 13½′ to 7° 27½′ S. It is low, and generally only 8 or 10 feet above high-water tides.—*Horsburgh.*

DIEN-NEEUNG. BURM. In Amherst, a timber used for rice-pounders; it is a close-grained, compact, brown, hard wood.

DIGA, a form of marriage amongst the polyandrist Kandyans in Ceylon, in which the wife dwells in her husband's house.

DIGAMBARA, or sky-clad, also called Nirgrantha, without a bond, and Nagnata, naked. These are gymnosophist mendicants, who live absolutely separated from society, and from all family connections. Their name is commonly understood as sky-clad, and is derived from Dic, a quarter of the globe, and Ambar, apparel, and indicates one who has the world or universe for his covering. The Digambara is a division of the Jains, the members of which either go naked, or wear coloured clothes, in opposition to the Swetambara, or those who wear white. These ascetics have ceased to appear in public since the early part of the 19th century.—*Wilson; Sherring.*

DIGAMBARA, one of the six atheistical systems of philosophy current amongst the eastern Aryan race in India. The other five are the Charvaka, Yogachara, Sidhanta, Wai-bashika, and Madhyamica, all full of indeterminate phrases, and containing a jumble of atheism and ethics. The derivation of Charvaka is from Charu, insinuating, and Vaka, a word.

DIGITALIS PURPUREA, *Linn.*, is the Mauti-hwang of the Chinese and the foxglove of the English.—*Smith.*

DIGITIGRADA, a tribe of mammals belonging to the order Carnivora. See Carnivora.

DIG-VIJAYA. SANSK. From Dic, the quarters of the earth, and Vijaya, conquest. The Dig-Vijaya is a part of the Mahabharata, relating the conquests of the four younger Pandava. It is also the name of a work by Sankaracharya, in support of the Vedanta philosophy.

DIHANG or Dihong, a river in the Lakhimpur district of Assam, one of the three which contribute to make up the Brahmaputra. The Dihang is supposed to be the connecting link between the Sang-pu (Tsang-pu) of Tibet and the Brahmaputra of Assam.—*Imp. Gaz.*

DIHING is the name of two rivers in Lakhimpur district, Assam, which contribute to make up the waters of the Brahmaputra,—(1) the Noa Dihing, rising in the Singpho hills; (2) the Buri Dihing, rising in the Patkoi hills.—*Imp. Gaz.*

DII MAJORES and Dii Minores. See Hindus. Dii Patres of the Romans, the Pitrideva of the Hindus. See Dehwar.

DIJLAH, a name of the Tigris. The designation applied to it in the Scriptures is Hiddekel. Dijlah is the name which it bears at the present day among a large portion of the people living

near its banks. The western branch rises at a spot which is about 20 miles westward of Arghani Maden, and near 10 miles southward of the centre of the Ghuiljik lake; its course is north-eastward along the deep valley at the foot of the elevated ground of Kizan (4568 feet above the Black Sea), and, after having continued in the same direction towards the heart of Kurdistan, when a little more than 25 miles from the spring, it makes a sweep so as to take the direction of Arghani Maden, or nearly south.

DIKAMALLEE, HIND., is the fragrant gum-resin of Gardenia lucida, *Roxburgh.* It exudes in amber-coloured transparent drops at the ends of young shoots. It is most useful in preventing vermin breeding in wounds, and in keeping away flies from sores, by its strong aroma, and is an article in the materia of the village farrier. It deserves more attention.—*M. E. J. R.; Spry.*

DIK'HIT, a tribe of Rajputs inhabiting the parganas of Kootea, Futtehpur, Ekdulla, Mootour, and Ghazipur, in the Futtehpur district, also from Oudh to Bundelkhand.—*Elliot, Supp. Gloss.*

DIKO. KOL. A foreigner.

DIKOKAMENNI, a Kirghiz horde, divided into two wings, 'On' and 'Sol,' or right and left, corresponding to the Mongolian 'Borongar' and 'Zungar.' The right wing consists of two divisions, 'Adgené' and 'Tagai.' The left wing is formed of three tribes, who frequent the Talas. Their chiefs are related to the Khan of Kokan, who are on the female side of Kirghiz extraction.—*Valikhanof and M. Vemukof, Russians*, p. 103.

DIK PALAKA, in Hindu mythology, a regent of a quarter of the heavens. They are eight in number,—

Indra, E.	Kuvera, N.	Isani, N.E.	Vayu, N.W.
Varuna, W.	Yama, S.	Niruta, S.W.	Agni, S.E.

DIKSHA. SANSK. In Hinduism, sacrificial worship; initiation into sacred rites. Among Hindus of Malabar, the ceremony of abstaining from shaving for one year after the death of a relative.

Dikshæniga, a sacrificial act, explained in the beginning of the Aitareya Brahmana, meant to represent, by simple and natural emblems, the new birth (Matriculation), through which a man on his first admission to the sacrifice was believed to enter a new life.

Dikshaniya Ishti. SANSK. A curious sacrificial ceremony.

Diksha Visarjane. SANSK. A religious ceremony among Brahmans, who for six months after marriage allow their hair to grow, and then go to their father-in-law's house to have the head shaved.—*Max Müller.*

DILAZAK, a tribe in the Peshawur division, now few in number; were possessors of the Peshawur valley, till they were driven out by the Yusufzai. They are Mahomedans.

DILEM, a powerful tribe of Arabs, with about 1660 tents, in the province of Baghdad, chiefly on the E. bank of the Euphrates, from west of Baghdad to the north as far as the town of Hit. Their territory is rich, with 340 irrigating wells. They are agricultural and pastoral. The district yields sulphur and bitumen, also salt, from thermal springs.—*MacGregor.*

DILIVARIA ILICIFOLIA. *Juss.*

Acanthus ilicifolius, *Linn.*, *Roxb.*, *Rheede.*

Hakoroh, . . .	BENG.	Paina shuh, . .	MALEAL.
Ka-ya, ...	BURM.	Koli moli cheddi, .	TAM.
Harkut, ...	HIND.	Alisa, Eti chilla, .	TEL.
Harkuch kanta, .	,,		

Grows in marine lagoons, canals, and deltas in south of India. It resembles the holly; its leaves and root are used medicinally.—*Roxb.; Voigt.*

DILKA, or smearing with oil, is in general use by the natives of the Soudan every evening by those who can afford it, before retiring to rest; to its use they ascribe the entire absence of cutaneous diseases, and also their being able to resist the cold and cutting winds of winter, with no other protection than a slight calico scarf or shirt.—*Egypt, by J. Petherick.*

DILLAET. HIND. A summons-server, a peon.

DILLENIACEÆ. *D. C.* A natural order of handsome trees, shrubs or under shrubs, rarely herbs; above 100 species, belonging to the East Indies and New Caledonia. The Indian forms are ranged under Tetracera, Wormia, Acrocomia, Dillenia. Several Dillenia yield useful and valuable timbers, in Ceylon, in the two Peninsulas, and in the Northern Provinces of India. Some are not yet specifically determined. The young fleshy calyces of D. scabrella and D. speciosa have a pleasant taste, and are used in curries by the inhabitants of Chittagong and Bengal. Dillenia augusta, Zim-byun, BURM., also D. scabra, Byew, BURM., and D. speciosa, Thab yew, BURM., occur in the Pegu forests; all three have a light-brown wood, and afford large and good timber for house buildings. In March and April the forests are dazzling from the bright yellow flowers which are crowded on their leafless branches. A species, always found on the borders of streams of Burma, produces a large green fruit, which is a favourite vegetable with the natives. Gamble mentions nine species.—*Captain R. Benson; Hooker, Him. Jour.* p. 395; *Mason; Royle, Him. Bot; Voigt; M'Clelland, Cal. Cat. Ex.* 1862.

DILLENIA AUREA. *Sm.* Zim-byun, BURM. Abundant in the plains and hills and in the forests of British Burma, but more scarce to the north of it, and found on the banks of the Godra by General Hardwicke. Wood of a light-brown colour, occasionally used in house-building, but mostly for firewood. Breaking weight, 198 lbs. —*Dr. Brandis, Cal. Cat. Ex. of* 1862.

DILLENIA ORNATA. *Wall.* Zim-byun, BURM. Grows plentiful and of large girth in Pegu and Moulmein, and furnishes a strong, good timber, useful for general purposes in house and ship building. It has large gaudy yellow flowers.—*Dr. Mason; Captain Benson.*

DILLENIA PENTAGYNA. *Roxb.*

D. augusta, *Roxb.*		Colbertia Coromand.,	*D. C.*
D. pilosa, *Roxb.*		Wormia ,,	*Spr.*
Yeenga, Bjooben,	BURM.	Rai, Pine, Nai-tek,	T.
Kanagalee, Machil,	CAN.	Kalinga, Chinna, .	TEL.

This is a very large tree, abundant throughout South and Northern India and Burma. It flowers towards the end of January, or as late as March or April, when the tree is destitute of leaves. The wood is close-grained, strong, tough, fibrous, and durable even under ground, of a reddish-brown colour. It is not easily worked, and is subject to warp and crack. A cubic foot unseasoned weighs 85 to 90 lbs., and 70 lbs. when seasoned; its specific gravity is 1·120; it is used in house and ship building, and is adapted for

cabinet purposes.—*Drs. Roxb.* ii. p. 652, *Wight, Cleghorn, Gibson, Brandis, Voigt*, p. 18; *Captain Beddome; Cal. Cat. Ex. of* 1862; *Useful Plants.*

DILLENIA PILOSA. *Roxb.* Grows in Assam near Goalpara, on the banks of the Megna, and furnishes a hard, tough wood, much used for canoes. —*Roxb.* ii. p. 652; *Voigt; Mendis.*

DILLENIA RETUSA. *Thunb.*

Wormia retusa, *H. f. et T.* | Goda para, . . SINGH.

A moderate-sized tree, growing in Ceylon to an elevation of 2000 feet, but not abundant; used for roofs of houses.—*Thw.* p. 5.

DILLENIA SCABRELLA. *Roxb.* ii. p. 653.

D. scabra, *Brandis.*

Zen-bywon, . .	BURM.	Kulgul, ...	CAN.
Kyet-sen-bywon, .	,,	Kurmul, . . .	MAHR.

A stately timber tree; grows in Chittagong, also in Canara and Sunda, where it is most common below the ghat. Grows large, long, and straight. Its acid calyx leaflets used in curries. Wood seems to be used for boat planks in Canara, but it is not reckoned a choice wood in the Bombay Presidency. It is plentiful in the Pegu province, but becomes scarce to the north of it, and it is there of large girth; furnishes a large, good timber, and is useful for general purposes, as house and ship building.—*Drs. Roxb.* ii. p. 653, *Gibson, and M'Clelland; Captain Benson.*

DILLENIA SPECIOSA. *Thunb., Roxb., Bedd.*

D. elliptica, *Thunb.*		D. Indica, *Linn.*	
Kaloonoot, . . .	BURM.	Mota kurmal, .	MAHR.
Hondapara, . . .	CEYL.	Uva, ...	TEL.
Chalta, ...	HIND.	Pedda kalinga, .	,,

This is a good-sized tree, one of the handsomest in India, and is much cultivated in particular parts by natives, about temples. It is found in dense forests at no great elevation in Malabar, the Northern Circars, Orissa, the Godavery forests, in various parts of Northern India, Bombay, Ceylon, Burma, and in the Malay Peninsula. The wood is hard and tough, and used to make gun-stocks and in boat-building, and is said to be very durable under water. The timber weighs 44 lbs. the cubic foot when seasoned, and 55 to 60 when unseasoned, and its specific gravity is ·704. Ovai-kai is the Tamil name of the fruit, and is used by the natives in their curries, having an agreeable acid flavour; and also in chatnis.—*Drs. Thwaites, Roxb.* ii. p. 650, *Voigt, Jaffrey, Brandis, M'Clelland, Riddell, and Irvine; Captains Beddome and Mason; Gen. Med. Top.* p. 199.

DILLI, D'ely, or Yemalle mountain, in lat. 12° 2′ N., and long. 75° 14′ E., in Malabar, near the sea-coast, rises 804 feet above the sea. Dilli was the first Indian land seen by Vasco da Gama. In Sonnerat's time the coast as far as Mount Dilli was inhabited by the Molandi, who lived merely by piracy, as the sea-robbers mentioned by Pliny, Arrian, Ptolemy, and other ancient authors. They united themselves to other pirates who resided on the Angedib islands, near Goa, and captured all the small vessels which sailed from Goa to Cochin. The huts in which their wives and children lived were on the eastern side of Mount Dilli.—*Voyage to the East Indies; Grand Tri. Survey.*

DILLI-AL, or Dhili wal, in A.H. 614, the ordinary coin of the country about Dehli. The original currency, it is supposed, corresponded with the billon money of Prithi-raj and others, which was imitatively adopted by the Mahomedans in the early days of their occupation of Hindustan.

DILLON, CAPTAIN, sailed from Port Jackson on the 4th June 1827, and at Mannicola discovered property that had belonged to La Perouse. The King of the French created him a Knight of the Legion of Honour.

DILL SEED, seed of Anethum sowa.

Buzr ul shalat, Shubil,	AR.	Seleya, . . .	SANSK.
Sowa, . .	GUJ., HIND.	Satta-copa, . .	SINGH.
Mungsi, ...	JAV.	Saddacuppei, . .	TAM.
Adas-manis, . .	MALAY.	Saddapa, ...	TEL.
Misreya, Sitasiva,	SANSK.		

Flattened elliptical seeds, with brown and slightly convex backs, and pale membranous margin. Both the fruit and the plant are much used in the East Indies as condiments and articles of diet. The carpels have a bitter aromatic taste, making them useful as carminatives, and supposed to be used in the manufacture of gin. The seeds are procurable in all Indian bazars. The Indian species is the Anethum sowa. Dill leaves are used to flavour pickles.—*Faulkner; Jaffrey.*

DILWARA, at Mount Abu, has been famed since a remote antiquity, and pilgrims seem to have been attracted to its temples since A.D. 1034. Hindu temples seem to have existed here in remote ages, dedicated to Siva and Vishnu, but all traces of them have disappeared; and on it now stand famous Jain temples, built by Bimul Sah, a rich Jain merchant, and others. In Jain estimation, Abu is the holiest spot on earth.

DILZAK are the predecessors of the Pathan tribes in the Peshawur valley. They seem to have considerable Pathan blood, and are supposed by some to be earlier Afghans.—*Campbell*, p. 96.

DIMAL, a tribe smaller than the Mechi, but somewhat similar in appearance, with a language that in some degree differs. The Kachari, Naga, Abor, and some other tribes bordering on Assam, are supposed to be of the same race as the Mechi. The Mechi form the chief population of the forests and N.E. Doars at the foot of the Sikkim and Bhutan hills, and a few have recently settled on the extreme eastern portion of the Nepal Terai. They are supposed to be the same as the Bodo, whom Mr. B. Hodgson described. Their features are described as Mongolian or Indo-Chinese; they are fairer than the Hindus around them, and of a yellow tinge; they are taller and larger than the Nepalese cultivators, are addicted to spirits and to smoking opium. They are proof against malaria, and make small temporary clearances in the forest; they are inferior to the Tharu in industrial habits.

DIMITY. Basin, FR.; Dobletto, IT.; Dimite, SP. The name is supposed to be from Damietta. Dimity is a stout cotton cloth, white, ornamented either with raised stripes or figures, and employed for bed and bedroom furniture.—*Toml.; M'Culloch.*

DIMIYA. SINGH. The great red ant of Ceylon; Formica smaragdina; it bites severely.

DIMRAUT. HIND. One of the twelve pal or tribes of the Mewati.

DIN or Deen, with Millat and Mazhab, are three Arabic words used by Mahomedan writers for religion. Din means as it stands in relation to God, Din-Allah, the religion of God; Millat as it stands in relation to a prophet or lawgiver, as Millat-i-Ibrahim, the religion of Abraham; and Mazhab as it stands in relation to the commentators of Islam, as Mazhab-i-Hanafi. Din is, however,

of general application. Mahomedans sometimes call their own religion, Din-i-Islam, the Faith of Salvation. Mazhab relates to the sectarian part of the Din. Thus a Mahomedan is of the Din-i-Islam, but may be of the Shiah or Sunni Mazhab. Din is everywhere used as the Mahomedan war-cry: Din! Din! For the faith! For the faith! The principles of the Koran generally, but in particular the text in chapters 8 and 47 which inculcates war against non-Mahomedans, and death in the contest as the surest passport to heaven, have established amongst Mahomedans an intimate connection between the spiritual aspiration and political convictions. Hami-i-Din, Defender of the Faith. Din-pana, Protector of the Faith.

DIN or Dina, HIND., a day, considered in a great variety of ways and durations, of which the following are the principal:—

1st, a Savana or Bhumi savana dina, a natural day, being the time between two sunrisings.

2d, a Saura dina. Of these there are two kinds; and the similarity of the name tends greatly to confuse the beginners in the study of Hindu astronomy. First, the absolute sense of Saura being sidereal, the Saura dina is the time between the same point of the ecliptic rising twice; or, more precisely, the time between the equinoctial points rising twice. Second, the other Saura dina is the time which the sun takes to describe one degree of the ecliptic. It follows, therefore, that, strictly speaking, neither of these kinds of days are equal throughout the year, yet the former (which is also called Nacshatra dina) are supposed to be so in the first steps of several operations. Such is also the case with the latter, but this only happens when calculating the mean elements of the planets by the Vacyam process.

3d, Diva dina is equal to a sidereal revolution of the sun.

4th, Pitrya dina, to a synodical revolution of the moon.

5th, Brahma dina is equal to a calpa, or 4,320,000,000 years, his nights being equal to his day.

6th, Yuga dina is another word for Ahargana, meaning the number of days expired from the commencement of a yug. Yuga dina also means the anniversary day of that on which a yug began, which is always noticed in the kalendar. —*Warren's Kala Sanhita.*

DINAJPUR, a town which gives its name to a district in the west of the Rajshahi, Kuch-Bahar division of Bengal. In 1872 the population of the town was 13,042, and of the district 1,501,924. The most numerous caste is the Kaibartta (38,051); the fishing castes are also strongly represented, especially the Tier, with 17,364, and the Jahza, with 10,296 members. There are 16,710 Vaishnav mendicants; many of the Pali tribe are said to belong to this sect.—*Imp. Gaz.*

DINA-KARA. SANSK. The day-maker; a name of Surya, the sun.

DINAPUR, a large military cantonment which gives its name to a subdivision of the Patna district. The town is on the right or southern bank of the Ganges, 8 miles west of Patna, in lat. 25° 38′ 19″ N., and long. 85° 5′ 8″ E., with 42,084 inhabitants in 1872. The Dinapur district had 141,337. During the mutiny of 1857, the native soldiers of three regiments here joined the rebels.

DINAR. Denarius, LAT.; Dinara, SANSK. The Roman Denarius was of silver of the unit of 60 grains. The Dinara of the Sanskrit was 32 rati, or 64 grains. Though sometimes applied by Ibn Batuta to an Indian gold coin, Dinar is the only name he uses for the standard Indian silver coin. Sometimes the term used by him is Dinar Diraham, which Defremery in some instances renders 'Dinars of silver,' and in others, 'Dinars in Dirhems.' Sometimes the term used is Dinanir fizzat. The Dinar in Akbar's time was a gold coin weighing 1 miskal, *i.e.* 1⅓ dirham, 1 miskal = 6 dang, 1 dang = 4 tassuj.—*Müller; Yule, Cathay.*

DIND and Khoosh-hali, though etymologically the antipodes of each other, the first meaning a compulsory contribution, the other a benevolence or voluntary, have a similar interpretation in Rajputana. Dind is coeval with Hindu legislation. The bard Chand describes it; and the chronicler of the life of the great Sidraj of Anhalwara, 'who expelled the seven didda' or 'great evils' whose initial letter was d, enumerates dind as one of them, and places it with the Dholi and Dhakun, or minstrels and witches. Zalim Singh, regent of Kotah in 1817, abolished the dind, and commanded a stone to be raised in the chief town of every district of his country, on which was inscribed the edict of perpetual abolition of dind, with the denunciation of eternal vengeance on whosoever should revoke it. The effigies of the sun, the moon, also of the cow and the hog, animals reverenced or execrated by all classes, were carved in relief to attest the imprecation.—*Tod's Rajasthan*, ii. pp. 208-570.

DINDIGUL, a town in the south of the Peninsula, with 13,000 inhabitants, in a beautiful and fertile valley in Madura, extending along the foot of the ghats. It is in lat. 10° 21′ 39″ N., and long. 78° 0′ 17″ E., 800 feet above the sea. It is 270 miles S.W. from Madras. The principal rivers are the Kodavar, Mangerry, Vagachay, Kul, and Eilur. The Kodavar is a stream of considerable magnitude. A rock on the W. side of the town is fortified, the Dindu-kal, the rock of Dindu, an asura or demon.

DINDUGA TREE. ANGLO-CAN. Bayla-Nava maram, TAM. According to Dr. Roxburgh, a species of Andersonia. A large and valuable tree of the Wynad.—*Ains. Mat. Med.* p. 213.

DINGO, a species of dog in Australia, Canis Australasiæ.

DINNER. To send a dinner to another person is a common compliment among Mahomedans. In Persia, when requesting permission to do this, the party begs leave to send a little Noon-i-jow, barley bread, which humble phrase (nān-i-jao) may include every delicacy of the season. In India the phrase is Dal khooshka, split peas and rice.

DIOCLESIAN ERA, or Martyrs' era, dates from A.D. 284, the year of that emperor's accession.

DIODON, globe fish of the fam. Gymnodontidæ. There are 6 Diodon, 23 Tetrodon, 1 Triodon, in Asiatic Seas. The Diodons have but one large tooth above and below, and are usually protected by large, strong spines. Tetrodons and Diodons have the power of inflating, with wind, a membrane which extends along the under side of the abdomen, which causes them to float on the surface of the water, without the power, it is said, of directing their course; the membrane, when inflated, gives to the fish an almost spherical

form, and is usually defended by spines and prickles.

DIOMEDEA, a genus of birds of the family Procellaridæ, comprising the genera Diomedea, Procellaria, Prion, Pelicanoides, Puffinus, Thalassidroma. The birds are familiar as the albatross to all travellers in the southern seas, the common albatross, the D. exulans, *Linn.*, being very abundant. D. fuliginosa, *Lath.*, and D. chlororhynchus, *Lath.*, also met with. Mariners distinguish them by other names,—for instance, D. exulans is the wandering albatross, D. spadicea is the green-bill or Nelly, D. chlororhynchus their mollymaux or yellow-bill, and D. fuliginosa the sooty albatross; D. cauta, *Gould*, the cautious albatross; D. brachyura, *Gould*, the short-tailed albatross; D. culminata, *Gould*, the culminated albatross; D. melanophrys, *Gould*, is the black-browed albatross, and other species, D. gibbosa, D. nigripes, and D. olivaceo-rhyncha.

D. exulans, *Linn.*, Monton du Cap, Fr., is abundant and equally numerous in all parts of the ocean between lat. 30° and 60° S.; but it ranges much farther south, even to within the antarctic circle. They measure 14 feet across.
D. melanophrys, *Temm.*, is the most abundant species in every part between lat. 30° and 60° S.
D. cauta, *Gould*, was procured by Mr. Gould off the south coast of Van Diemen's Land.
D. chlororhynchus, *Lath.*, occurs between lat. 30° and 60° S., in both the Atlantic and Pacific Oceans.
D. culminata, *Gould*, is rather abundant both in the Pacific and Atlantic Oceans, between lat. 30° and 50° S.
D. fuliginosa, *Gmel.*, occurs in all parts of the ocean, between lat. 30° and 60° S.
D. brachyura, *Temm.*, found in the North Pacific.
D. gibbosa, *Gould*, an inhabitant of the North Pacific.
D. olivaceorhyncha, *Gould*, China Seas (?).

—*Gray, Genera of Birds; Eng. Cyc.* p. 553.

DIONÆA MUSCIPULA, Venus' flytrap, is remarkable for the irritability of the lobes of the round and fringed blade of the leaf. These lobes close upon each other the instant any one of the six minute bristles upon their upper surface is touched, and in this way secure insects which alight upon the leaf, enveloped in a fluid of mucilaginous consistence, which seems to act as a solvent, the insects being more or less consumed in it.

DIONYSOPOLIS of Ptolemy, the modern Jalalabad.

DIONYSUS, a name of Bacchus, said to be Rama son of Cush, who invaded India; also supposed to be the same with Deva Nahusha, but also has been traced to Parasurama.

DIOPSIS, a genus of dipterous insects of the family Sepsidæ. The head is small, and appears as if it were furnished with two long horns, each having a knob at its apex. These horn-like processes are prolongations of the sides of the head, the knob at the apex of each being the eye of the insect. D. Sykesii of Gray is one of the largest species of the genus, and possesses the longest eye-stalks; these processes in this insect are of a pitchy red colour, and the body is of the same tint. The head and thorax are black, and the wings are coloured with brown. Colonel Sykes collected great numbers of this species near the hill fort of Hurreechunderghur, in the western Ghats of the Dekhan, at an elevation of 3900 feet above the level of the sea, lat. 19° 23′ N., and long. 70° 40′ E.—*Eng. Cyc.* ii. p. 354.

DIOSCOREA, a genus of plants of the order Dioscoreaceæ, which furnish the tropical esculents called yams. It is the type of the natural order Dioscoreaceæ. The following Eastern species are generally recognised:—

aculeata.	dæmona.	purpurea.
acutangula.	fasciculata.	pulchella.
alata.	glabra.	rubella.
anguina.	globosa.	sativa.
atropurpurea.	heterophylla.	tomentosa.
bolophylla.	nummularia.	triphylla.
bulbifera.	oppositifolia.	versicolor.
cirrhosa.	pentaphylla.	verticillata.
crispata.		

The yam plants are cultivated in India, also among all the tribes in the Archipelago, and generally most so where rice is least abundant; but they nowhere form the chief bread of the people, as rice, maize, or sago do. The Malay and Javanese names rubi or uwi extend to the languages of all the Malay and Philippine Islands, to those of the Pacific, and to Madagascar. In the Tonga it is ufi, in the Tahiti eui, in New Zealand uwi, in New Ireland u, and in Madagascar vwi. In Madagascar a wild yam is called uvi-ala, which is, without doubt, the uwi-alas—the wild or forest yam of the Javanese, with the elision of the final consonant, conformably to the genius of Malagasi pronunciation. The word ubi, besides being applied specifically to the yam, is used as a generic for farinaceous roots. Thus the batata, or Convolvulus batatas, is called by the Malays uvi-jawa, or the Javanese yam, to distinguish it from the Dioscorea. While many species are nutritious in this genus, some are highly dangerous. D. dæmonum and D. triphylla, both ternate-leaved species, have very nauseous and dangerous tubers. In Otaheite, the D. bulbifera, which bears small fleshy angular tubers along the stem in the axils of the leaves, is the favourite species. The elephant-foot yam, with a tuber about the size and shape of an elephant's foot, is white, and often as light and agreeable as a potato. It abounds in Karen gardens, but is rarely seen among the Burmese, or in the market. In Bengal, the species most esteemed is D. globosa; after it D. alata, and next D. purpurea.

D. Crispata. *Roxb.* Myouk kya, Burm. A yam of Bengal.

D. Dæmona. *Roxb.* Ubium sylvestre, *Rumph.* Ko-wæ, Burm. Grows in Gorakhpur and the Moluccas. It is remarkable for its large ternate leaves, of which the leaflets are sometimes nearly a foot long and six inches wide.

Dioscorea Japonica. *Thunb.* A hardy yam of Japan and N.E. Australia.

D. Nummularia. *Lam.* The Tivoli yam of continental and insular India and South Sea Islands; roots exceedingly good.

Dioscorea oppositifolia. *Linn.* Of India and China; an edible yam.—*Eng. Cyc.; Crawfurd, Dict.; Mason; V. Mueller.*

DIOSCOREA ACULEATA. *Linn.*

Mu-alu, . Beng., Hind.	Ka-awi of . . Pacific.
Chota pindalu, . Dukh.	Kuku-kukulalu, . Singh.
Goa potato, . . . Eng.	Sirru-vullie kelangu, Tam
Prickly stemmed yam, ,,	Kanta-kalangu, . . ,,
Kata-kelenga, . Malkal.	Kummara baddu, . Tel.
Pudie-kelengu, . ,,	Dampa, ... ,,

This is a very valuable and delicate small yam, somewhat resembling the sweet potato in appearance; tubers of an oval form, and very white,

generally weighing about two pounds. The taste is like that of a fine dry yam.—*Roxb.; Voigt.*

DIOSCOREA ALATA. *Linn., Roxb.*

Kam-alu, BENG., HIND.	Perin-valli-kelanga, MAL.
Khum-alu, . „ „	Rosa kanda, . . SINGH.
Myouk-phoo, . . BURM.	Yams-kelang, . . TAM.
Wing-stalked yam, ENG.	Cachay kalangu, . „
Ubi, . . JAV., MALAY.	Niluvu pendalum, TEL.

This very large yam grows wild in both the Konkans, but is cultivated on the coast of Coromandel; and in Bengal it is esteemed next best to D. globosa. It has many varieties. —*Ainslie; Roxb.; Voigt; Mueller.*

DIOSCOREA ATROPURPUREA. *Roxb.*

Myouk nee, . . BURM. | Dark purple yam, . ENG.

This, with a dark purple root, is one of the best yams. It is extensively cultivated both by Karens and Burmese, and at Malacca; tubers are large and irregular, and grow so near the surface of the ground as to appear in dry weather through the cracks that they make in the soil by upraising the earth.—*Mason; Eng. Cyc.*

DIOSCOREA BULBIFERA. *Linn.*

Karu-karinda of BOMBAY.	Panu-kodol, . . SINGH.
Bulb-bearing yam, ENG.	Malaka kaya penda'am, TEL.
Katu-katsjil, . MALEAL.	

A native of New Holland, and is cultivated on the western coast of India, and both the Konkans. The root is edible, and is applied externally to ulcers. The leaves are used as greens.—*Voigt.*

DIOSCOREA DELTOIDEA. *Wall.*

Dioscorea bulbifera, *L.*?

Tardi, Tharri, . . BEAS.	Kheli, Tarar, . CHENAB.
Bazar leaves, Tarar pattr.	Krish, ... PANJ.
Kniss, JHELUM, KASHMIR.	Kithi, Dharus, . RAVI.
Kriss, KASHMIR, CHENAB.	Kans, Gungru, . SUTLEJ.
Tar, Kithi, . . . „	Kaspat, Parwatti, TR.-IND.

There is doubt as to whether all these vernacular names mean the same plant; but if so, it grows abundantly in many parts of the Panjab Himalaya, from as low as 2000 up to 9200 feet, and is found Trans-Indus. The root is used in Kashmir for washing pashm wool for shawls, and both there and on the Chenab and Sutlej for washing woollen cloth. The root of this, or a variety (?), which grows to several pounds' weight, after steeping in ashes and water to remove acridity, is largely eaten cooked by various classes in parts of the Siwalik and outer hills, but in other places is not used; and Dr. Stewart was once told that the tongue would rot from eating it. Honigberger says that it is used medicinally. — *Dr. J. L. Stewart, Panjab Plants*, p. 229; *Powell*, i. p. 378.

DIOSCOREA FASCICULATA. *Roxb.*

Karen potato, . . . ENG. | Ka dwæoo, . . BURM.

This small yam of Bengal is not much larger than a kidney potato, which it much resembles both in appearance and taste. It is cultivated extensively by the Karen race, and, being more like a potato than a yam, has acquired the names of the Karen potato and the Tavoy potato. It is the best vegetable the Karens have, but unfortunately it can be obtained during a few months only in the year; is largely cultivated in Bengal for food, and to make starch.—*Mason; Voigt; Roxb.* iii. p. 801.

DIOSCOREA GLABRA, *Roxb.*; D. batatas, *D. C.* Chinese yam; introduced into Europe about the year 1849, having been sent from Shang-hai by M. de Montigny, the French consul. It is everywhere cultivated in China, and bears the names of Chou-yu, Tou-tchow, Chan-chou, Chan-yo, and Chan-yu, which signify the 'Arum of the Mountain.' At Nankin it is very large and of excellent flavour; that of the Chou district is still better, but for medicinal purposes the Chinese prefer that of the Hoai-king district, where the Chou-yu root is laxative and sweet. It is particularly worthy of a place in the kitchen garden, as well as in field culture, on account of its perfectly feculent flavour, and the absence of any after-taste of sweetness, acidity, or spiciness, such as is often found in other plants, as also on account of the ease with which it may be cultivated, and the facility of preserving it from decay. —*Agricultural Rep. to Commissioners of Patents to House of Assembly for* 1854.

DIOSCOREA GLOBOSA. *Roxb., W. Ic.*

Chupri alu, BENG., HIND. | Guna pendalam, . TEL.

Is the most esteemed of all the Indian yams. Its flowers are highly fragrant; the tubers are white internally; it has arrow-headed cordate leaves.—*Roxb.* iii. p. 797; *Mason; Voigt.*

DIOSCOREA PENTAPHYLLA. *Linn.*

Kanta-alu, BENG., HIND.	Nureni kelengu, MALEAL.
Oolsie of . . BOMBAY.	Nuran kelangu, . TAM.
Shenorvail-chand, MAHR.	Mullu pendalam, . TEL.
On-do? . . . MALAY.	Pandi mukku dampa, „

This yam grows wild over all the East Indies and throughout the Archipelago; the flowers are used as greens, and the tubers as an esculent. In some parts of Southern India is called Knat vulli kalang, or wild yam. It appears to be the Nooren kalangu of the Hortus Malabaricus, and the On-do of the Malays.—*Ainslie*, p. 249; *Roxb.* iii. p. 806.

DIOSCOREA PURPUREA. *Roxb.*

Rukto-guranya-alu, BENG.	Puthuschary vullo kelangu, . . . TAM.
Sweet potato of Pondicherry, . . . ENG.	Desavali pendalam, TEL.
Lal-guranya alu, . HIND.	

This holds the third rank amongst the yams, and is cultivated throughout India, being boiled and eaten like a potato. The tubers are permanently stained purple throughout, immediately below the cuticle, and are sometimes three feet long. Its flowers are fragrant.—*Roxb.* iii. p. 799.

DIOSCOREA SATIVA. *W.*

Shu-yu, ... CHIN.	Perin-vullie-kelengu, TEL.
Shan-yoh, ... „	Rata-kodol, . . SINGH.
Common yam, . . ENG.	Yams-kolung, . . TAM.

This is eaten all over the E. Indies by Europeans and natives.—*Ainslie*, p. 251.

DIOSCOREA TOMENTOSA. *Spr.* Subbadumpa, TEL. Grows in the Peninsula of India, at Travancore, and at Gingee.—*Voigt.*

DIOSCOREA TRIPHYLLA. *Linn.*

Mar-chaina of BOM., BEN.	Three-leaved yam, ENG.
Shu-yu, ... CHIN.	Tsiagri nuren, . . MAL.

A yam of the Konkans and Moluccas; said to be used to render the cocoanut tree toddy more intoxicating.

DIOSCURI, the Greek analogue of the Aswini.

DIOSPYRACEÆ, a natural order of plants, called by Ventenot and Lindley the Ebenaceæ, or ebony tribe. They consist of trees or shrubs, and include two East Indian genera, Diospyros and Maba. The species of Diospyros form large trees, with alternate thick and often leathery leaves, remarkable for the hardness and the blackness of the wood of some species, and for the edible fruits of others, the woods being the ebonies and iron-woods of commerce. The fruits are noted for

their extreme acerbity before arriving at maturity, but they are sometimes brought from China as a preserve. Diospyros kaki is common to Nepal, China, and Japan; D. melanoxylon and D. chloroxylon, of the mountains of the Peninsula. D. embryopteris, found with them, extends from Sylhet and Bengal near to the Dehra Doon along the foot of the mountains, and D. montana to the borders of the Ruenka lake near Nahn. D. cordifolia seems to be common in every part of India, and D. tomentosa, first described by Dr. Roxburgh, from the northern parts of Bengal, extends to the Kheree jungle, and the foot of the lower hills; the same species appears also to exist in the central range. D. Roylei, *Wall. Cat. N.*, 4134, is a nearly-allied species, growing in abundance near Ajyghur and the Bisrumganj Ghat. Wight, in Icones, gives 15 species, and Mr. Gamble notices 41. Besides those noticed here, authors mention D. bracteata, *Roxb.*, of the Doab, D. cerasifolia, *D. Don*, Nepal, D. frutescens, *Bl.*, and D. macrophylla, *Bl.*, of Java, and D. serrata, *Buch.*, of Nepal. D. Candolleana, *W. Ic.*; Homedereya-gass. SINGH.; in Ceylon, a middle-sized tree, in the Saffragam district and Hinidoon Corle.

D. acuta, *Thw.*, and D. attenuata, *Thw.*, are middle-sized trees of Pasdoon Corle, in Ceylon.

D. affinis, *Thw.*, a middle-sized tree growing at Ooma Oya, on the lower road from Kandy to Badulla, in Ceylon; branches sub-glabrous; timber is suitable for building purposes.

D. calycina, *Bedd.* This good-sized tree, everywhere glabrous, leaves dark shining green, has only been observed in the Tinnevelly district and southern portions of Madura, where, however, it is very abundant in the ghat forests from the foot up to 3000 feet elevation. It yields a valuable light-coloured wood, which is much in use in the Tinnevelly district.—*Thwaites, Zeyl.* p. 181; *Roxb.; Eng. Cyc.; Dr. Mason; Royle, Ill. Him. Bot.* p. 262; *Wight, Icones; Bedd.*

DIOSPYROS CANARICA. *Bedd.* A good-sized tree, glabrous; leaves oblong to obovato-oblong. South Canara plains, near the foot of the ghats, called Kara-mara, allied to D. Arnottiana.—*Miq. in Bedd. Ic. Plant.*

DIOSPYROS CHLOROXYLON. *Roxb.*

Nulla ulemara wood.	Nalla ulimera, . . TEL.
Ullinda, ... TEL.	Illinda, ... ,,
Nallaulemara kurra, ,,	Pedda ulimera, . . ,,
Peddi illinda, . . ,,	

Grows to a large tree on the Circar mountains, and gives a very hard, useful wood; whereas it is generally a shrub about the Godavery forests. The fruit is edible.—*Roxb.* ii. p. 538; *Voigt; Beddome.*

DIOSPYROS CORDIFOLIA. *Roxb.*

Diospyros montana, *Wight!!*

Ban-gab, ... BENG.	Nalla ulimera, . . TEL.
Goundhan, . . . MAHR.	Kaka ulimera, . . ,,
Vuckan maram, . TAM.	Nalla urimida, . . ,,

Grows in Ceylon near Jaffna, in the Peninsula of India, in Coimbatore, and in Bengal. It yields a hard, heavy, strong wood, of a dark-brown colour, and difficult to work. Not uncommon in the Bombay side of India, but more in ravines and waste places than in forests; and Dr. Gibson had never seen a tree that would turn out a log 4 inches square. The wood is strong and durable.—*Roxb.* ii. 538; *Wight; Gibson; Thwaites; Voigt.*

DIOSPYROS CRUMENTATA. *Thw.* A very large tree of the central province of Ceylon; branches glabrous; leaves glabrous, oblong, abruptly and obtusely acuminate; growing at an elevation of 2000 to 4000 feet.—*Thw.; Bedd. Ic.*

DIOSPYROS EBENUM. *Linn.* Ebony.

Diospyros ebenaster, *Retz.* | Hebenaster, *Rumph.*

Abnoos, . ARAB., PERS.	Kal oowara gass, SINGH.
Kara mara, . . . CAN.	Kadu beriya? . . ,,
Steinholz, . . . GER.	Kaka-tati; Atcham, TAM.
Ἔβενος, ... GR.	Tumbi maram, . . ,,
Habenim, . . . HEB.	Tuki, ... TEL.
Tendu, Tendua (the white wood), . . HIND.	Toomika chava, . ,,
	Kendhoo, . . URIYA.

The timber of this great tree yields the best kind of ebony wood. In Exodus xxvii. 15, it is mentioned as brought with ivory by the men of Dedan. It seems to have been then brought both from Ethiopia and India, though Virgil appears to have been unaware of this, for he says (Georg. ii. p. 115),—

'Sola India nigrum
Fert ebenum.'

It was highly esteemed by the ancients. In Ceylon it is found not uncommon up to an elevation of 5000 feet, in great abundance in the north of the island, and to some extent in the Kandyan country. The great weight of the timber renders its transport very costly, unless where water conveyance can be obtained, which is seldom the case, but during the rainy months; and though immense forests of this wood still exist in the island, they are to a great extent too far from a port of shipment to be available. The exports of ebony have varied much of late years from 15,000 to 5000 cwts.

This valuable tree is not uncommon in the mountain forests on both sides of the Madras Presidency, and in Ceylon, and is well known in the Kurnool and Cuddapah forests, where it yields the best kind of ebony, generally jet black, but sometimes highly streaked with yellow or brown. It is very heavy, close, and even-grained, and takes a high polish; unseasoned, it weighs 90 to 100 lbs. the cubic foot, 81 lbs. when seasoned, and has a specific gravity of 1·296. It is used for inlaying and ornamental turnery, and sometimes for furniture. The sap-wood is white, hard, close-grained and strong, but not durable, but is used by the natives for various purposes.—*Roxb.; Thwaites; Tredgold; Holtzappfel.*

DIOSPYROS EMBRYOPTERIS. *Pers.*

D. glutinosa, *Kon.*; Embryopteris glutinosa, *W. Ic.*
E. glutinifera, *Roxb.*

Tumika, ... BENG.	Timbiri, . SANSK., SINGH.
Gab, . . BENG., HIND.	Tumbikai, . . . TAM.
Yendaik, ... BURM.	Tubiki, Tinduki, . TEL.
Timburi, ... DEKH.	Tumiki, ... ,,

Grows in the south of Ceylon, in damp forests, also in the Peninsula of India, in the Circars, all along the foot of the Himalaya to Sylhet and Assam. It is a common tree on the western coast of the Peninsula, particularly near marine lagoons, and is also found in many of the forests in Bengal, Mysore, and Bombay. The timber is only of average quality, but is used in Ceylon for the masts and yards of country vessels and for building purposes; and the fruit rusty-coloured, abounding in a viscid glutinous astringent juice, obnoxious to insects, and used by bookbinders, also for paying boats' bottoms, and also in infusion for

soaking fishing nets, as it contains much tannin. Thwaites describes three varieties :—

Var. β. Atrata; foliis membranaceis, gemmis, pedunculis calyceque nigro-pilosis.

Var. γ. Nervoia; foliis brevioribus, coriaceis, utrinque valde prominentim venosis, basi, rotundatis; gemmis, pedunculis calyceque nigropilosis; lobis calycis fructiferi erectis.

Var. α. is very abundant in the hotter parts of the island. Var. β. Less common, but generally distributed. Var. γ. In damp forests towards the south of the island. Wood indifferent, and not much used.—*Roxb.* ii. p. 533; *Rohde's MSS.; Voigt; Thw. En. Pl. Zeyl.* iii. p. 178; *Beddome.*

DIOSPYROS EXSCULPTA. *Ham., D. C.*

Diospyros tomentosa, *Rox.*	Tumki, ... TEL.
Tumboornee, . . MAHR.	

This is a valuable tree, not uncommon in the Cuddapah, Salem, and Kurnool forests, and probably elsewhere in the Madras Presidency, and is found in Bengal and Bombay. It grows to a considerable size, and yields a valuable jet-black ebony, so very similar to that of D. ebenum, that Colonel Beddome doubts if the two woods could be easily differentiated. The tree sheds all its leaves in the cold season, and they appear again with the flowers in the beginning of the hot weather.—*Beddome, Fl. Sylv.* p. 66.

DIOSPYROS GARDENERI. *Thw.* Kadoombaireya-gass, SINGH. A middle-sized tree of Ceylon, in the Saffragam and Kornegalle districts, and, less commonly, near Kandy, up to 2000 feet of elevation; branches terete, glabrous. It yields a valuable timber for building and cabinet purposes.—*Bedd. Ic. Plant.; Thw. Zeyl.* p. 181.

DIOSPYROS HIRSUTA. *Linn fils.*

Calamander wood tree.	Koul-midrie, . . SINGH.
Calu midiriya, . SINGH.	Calamander maram, TAM.

A middle-sized tree in the Saffragam and Galle forests of Ceylon. It furnishes one of the calamander woods of commerce. The figure is between that of a rosewood and zebra-wood; the colour of the ground is usually of a red hazel brown, described also as chocolate brown, with black stripes and marks. Veneer saws cut it without difficulty, and it turns well. A cubic foot weighs 57 lbs. It is a scarce though beautiful wood, close-grained, and the most valuable for ornamental purposes in Ceylon. It is exceedingly hard, and finely veined, with different shades of black and brown.—*Ains.; Tredgold; Holtzappfel; Mr. Faulkner; Thw. En. Pl. Z.* p. 181.

DIOSPYROS INSIGNIS. *Thw.* Gona-gass, SINGH. A very large tree of the damp forests of Ceylon, growing up to an elevation of 2000 feet; also in the dense forests of the Animallays; young branches slightly pilose.—*Thw.* p. 180.

DIOSPYROS KAKI. *Linn.*

D. Chinensis, *Bl.*	Embryopteros kaki, *G. Don.*
Tse-tee, Tay-tee, BURM.	Persimmon of China.
Sz, Tsz, ... CHIN.	Keg fig of Japan.
Chinese date, . . ENG.	Chinese fig.
Date plum of China.	

A tree of Nepal, Burma, Cochin-China, and celebrated in China and Japan, where it is common The fruit in Japan and China attains the size of an orange, and is frequently sent to Europe in a dried state. Preserved in sugar, it is a large, thin-skinned, juicy fruit of an orange-yellow colour, with a sweet taste. The tree is occasionally cultivated by the Burmese, but it bears fruit very sparingly, and is by no means equal to a good apple.—*Roxb.* ii. 527; *Mason; Eng. Cyc; Smith.*

DIOSPYROS KURZII. *Hiern.* A timber tree of the Andamans.

DIOSPYROS LOTUS. *Linn.*

Meh-tsau-rh, . . CHIN.	Date plum, . . . ENG.
Green ebony tree, ENG.	Amlok, Malok, . HIND.

This is the true lotus of the Lotophagi. It is common in Kaghan, in the hills and gardens of Murri and Hazara and N. China. In parts of Hazara the male plant is called Gwalidar, and the female Amlok. Timber good. In Hazara it is valued chiefly for its fruit, which is purple in colour, and about the size of a cherry or a pigeon's egg; it is eaten either fresh or dried. The tree is not uncommon in the western part of the Jhelum basin from 2500 to 6000 feet, and appears to be common in some parts of the northern Trans-Indus hills; and one or two specimens were grown at Peshawur. It is a handsome little tree, growing generally to 3 or 4 feet in girth, the largest seen being one of 6 feet girth and 35 feet high at Jared in Kaghan, and another about the same size on the Kishenganga. There are three trees (probably introduced by fakirs) at Juggatsukh (6000 feet) in Kullu, and there called Bissahrpala, the largest of 12 feet girth. Griffith remarks that the fruit is not worthy of any notice; but when fresh or even carefully dried, it is sweet and pleasant enough, and the Afghans, etc., prize it, large quantities being brought to the Peshawur bazar from Swat, etc. Bellew mentions that it is eaten plain or with rice, or is used in sherbets. It has the appearance of a dried cherry, but darker in colour. Irvine states that, in the Panjab, spirits are distilled from the fruit.—*Drs. Irvine, J. L. Stewart, Cleghorn; V. Mueller; Smith.*

DIOSPYROS MABOLA. *Roxb.*

D. discolor, *Willd.*	Cavamillea Philippensis,
Embryopteris disc, *G. Don.*	*Desrouss.*

Often called Mangosteen, under which name it is cultivated extensively in gardens at Vizagapatam. It is a small tree, native of the Philippine Islands: wood black, very compact. The fruit, called Mabola, is brown, with a pink-coloured fleshy rind about the size of a quince; its flavour is said to be agreeable.—*G. Don; Madras Ex. Ju. R.*

DIOSPYROS MELANOXYLON. *Roxb.*

Abnus, . . ARAB., PERS.	Tendu, ... HIND.
Kendu, Kiu, . . BENG.	Tumbali maram, . TAM.
Ouk-chin-ya, . . BURM.	Tumma chettu, . TEL.
Balai? CAN.	Tumida, Tummika, ,,
Wu-mu, Wu-pi, . CHIN.	

It is the ebony tree of the Coromandel coast, and is found on the mountains of that coast, as well as on those of Malabar and Ceylon. The fruit is eaten by the poor. The leaves are deciduous in the cold season, the new ones appearing with the flowers in April and May. As in other species, it is only the centre of the large trees that is black and valuable, and this varies in quantity according to the age of the tree. The outside wood, which is white and soft, time and insects soon destroy, leaving the black untouched. The ripe fruit is eaten by the natives, though rather astringent, as is also the bark. It grows in Coimbatore, North Canara, in Malabar, and Orissa, near the Godavery. It is a very large tree in Coimbatore. Its white wood is used for common purposes. It is found sparingly in North Canara, as below the Woolwa Ghat, and near Meerjan island. Accord-

ing to Dr. M'Clelland, it occurs plentifully in the southern forests of Pegu, from 15 to 18 inches in diameter and 50 to 70 feet in length, and might afford spars for naval purposes; but Dr. Brandis does not mention this as a Pegu tree.—*Drs. Ainslie, Roxb.* ii. 530; *Beddome.*

DIOSPYROS MICROPHYLLA. *Bedd.* A lofty tree of the Animallay dense forests up to 3000 feet elevation; very common in South Canara, forests of the ghats and plains (Sooleya), Wynad; trunk very straight, young branches verticellate; it has the habit of Leucoxylon buxifolium.—*Mig.*

DIOSPYROS MOLLIS? Ma-kleu, BURM. One of the black-dye plants. The blossoms of the shoe-flower plant are used by the Chinese to dye leather black, the juice of the cashew tree gives a black to linen, and the fruit of the melastoma affords a black dye. The celebrated vegetable Shan black dye is made from the fruit of this species of ebony, which is said to grow on the mountains that separate the province of Tavoy from the Siamese territories. Isolated plants may be seen in the gardens of Tavoy and Moulmein.—*Mason.*

DIOSPYROS MONTANA. *Roxb.*

Diospyros cordifolia, *Roxb., W. Ic.*

Kendu of Beas and Doab.	Hirek, Pasendu. . PANJ.
Teemroo, . . . MAHR.	Erra gadda, . . . TEL.
Teemboorni, . . ,,	

A middle-sized, handsome tree of the Circar mountains, in the hills eastward from Panwell, extending northwards to Ruenka lake, near Nahn; very common in the larger Bombay jungles, both near the coast and elsewhere, and it would be one of the most common of their mountain trees if allowed to grow; but it is generally cut off for burning material, or such like worthless purposes. It is not uncommon along the Siwalik tract up to near the Ravi, and occasionally out in the plains westward from Dehli to near Sirsa. Wood dark and strong, fitted for agricultural implements, indoor work, etc.; does not bear exposure, and could not be creosoted. Dr. Roxburgh says it is hard and durable, and is variegated with dark and white coloured veins. Dr. Stewart says it ordinarily grows to about 3 feet girth, but he had seen two trees of 7 feet. The wood is used for native roofs, etc. The fruit is not eaten, and he had heard it called poisonous. In some places it is applied to the hands for the boils to which the Bhisti are subject.—*Drs. Roxb.* ii. p. 538, *Ainslie, Voigt, Gibson, Stewart.*

DIOSPYROS MOONII. *Thw.* A middle-sized Ceylon tree near Cultura and Pasdoon Corle. Branches terete, slightly pilose when young, but soon glabrous.—*Thw. Zeyl.*

DIOSPYROS NIGRICANS. *Dalz.* A tree of the Bombay Ghats, arboreous, glabrous, turning very black in drying; leaves membranaceous, glabrous.—*Bedd. Ic. Plant.*

DIOSPYROS NILAGIRICA. *Bedd.* A middling-sized tree of Sispara Ghat, Neilgherries, allied to D. Candolleana of Wight.—*Bedd. Ic. Plant; Thw. En. Pl. Zeyl.* p. 182.

DIOSPYROS OOCARPA. *Thw.* Kalooka-doombaireya-gass, SINGH. A middle-sized Ceylon tree of the Kornegalle district, and at Haragam, near Kandy, at no great elevation. It furnishes one of the calamander woods.—*Thw. Zeyl.*

DIOSPYROS OPPOSITIFOLIA. *Thw.* Ka-loo midereya-gass, SINGH. A middle-sized tree of Ceylon at Hinidoon Corle, up to an elevation of 1000 feet; leaves opposite, slightly pilose when young. The timber much resembles the true calamander wood.—*Thw. Zeyl.; Bedd. Ic. Plant.*

DIOSPYROS OVALIFOLIA. *W. Ic.* t. 1227. A middle-sized Ceylon tree at Jaffna, in the central province, at Hewahette and below Hapootelle, at an elevation of 2000 to 4000 feet.—*Thw. En.*

DIOSPYROS PANICULATA. *Dalz.* A middling-sized tree; branches glabrous; leaves glabrous, lanceolate; grows in Bombay Ghats and in the Carcoor Ghat, Wynad, at 2000 to 3000 feet elevation.—*Bedd. Ic. Plant.*

DIOSPYROS PRURIENS. *Dalz.* A small or middling-sized tree; young branches densely hirsute, with long yellow hairs; very common throughout the Wynad up to 3000 feet elevation; also in the Animallays, the South Canara Ghats and plains, Tinnevelly and Bombay Ghats, also found in Ceylon.—*Bedd. Ic. Plant.*

DIOSPYROS QUÆSITA. *Thw.* Kaloo midereya-gass, SINGH. A great tree of Ceylon, at Singheraja and other forests between Ratnapura and Galle. This species produces the most valuable of the timber known as calamander wood, so much esteemed for ornamental cabinet work. Its branches are glabrous, leaves glabrous, prominently reticulated. D. quæsita is nearly allied to D. crumenata, but its larger leaves and fruit, and its pentamerous flowers, well distinguish it.—*Thw.*

DIOSPYROS SYLVATICA. *Roxb.*

Soondoo kadoombaireya-gass, ... SINGH.	Tella-goda, . . . TEL.

A middling-sized tree, common in the Peninsula in many of the western coast forests up to about 3000 feet, also in the forests of the Northern Division and in Ceylon, in the damp forests in the Hantani district and near Ratnapura, up to an elevation of 4000 feet.—*Roxb.* ii. 537; *Thw. Zeyl.*

DIOSPYROS THWAITESII. *Bedd.* A middling-sized tree; branchlets, young leaves, and inflorescence rufo-tomentose; grows in Ceylon at no great elevation; allied to, but quite distinct from, D. Candolleana of Wight.—*Bedd. Ic. Plant.*

DIOSPYROS TOMENTOSA. *Roxb.*

D. lotus, *Linn.*

Tumal, Kiu, . . BENG.	Mit'ha tendu, . . HIND.
Baulay, ... CAN.	Kendu, ... PANJ.
Mau-tsz, . . . CHIN.	Kaka tanduka, . SANSK.
Tumal, . . . HIND.	Chitta tumiki, . TEL.

This tall, elegant tree grows in the northern part of Bengal, in the Panjab, in Kullu and Kangra, and is common in the Siwalik tract, westward near to the Ravi, and extending to the Kherre jungle. It attains full size in 60 years. Length of trunk to first branch, 8 or 10 feet, and girth 4 feet. The wood of young trees is white, but that of old trees is black, and is termed Abnus, sap-wood soft; when the heart-wood becomes black, it is fine, extremely hard, but somewhat brittle, and is used by agriculturists for ploughs, and for the woodwork of their houses. It carves well, and insects are said not to touch it. In and near the Rohilkhand Siwalik tract, handsome workboxes, etc., are made from the wood; combs are made from it in the Ambala district. In Kangra, etc., it is used for ploughs, in house-building, and for small boxes. The fruit, which is said to ripen in June with the mango, is eaten, being sweetish and astringent, and not unpleasant. Raspings of the wood, called Burad-i-abnus, are

officinal, being given as an alterative.—*Roxb.* ii. 532; *Lt.-Col. Lake; Cleghorn; Kullu; Stewart.*

DIOSPYROS TOPOSIA. *Ham.*

D. racemosa, *Roxb.*; Embryopteris racemosa, *G. Don.* Kaha-kaala, . . Singh. | Tovaray, ... Tam.

A middling-sized tree of Ceylon, of the Tinnevelly Hills, and of Sylhet; glabrous, leaves coriaceous, not uncommon in damp forests up to an elevation of 4000 feet.—*Thw. Zeyl.* iii. p. 179.

DIOSPYROS WIGHTIANA. *Wall., D. C.*

Tendu, ... Hind. | Tumi, Tumbi, Tam., Tel.

This tree is common in most of the dry forests of S. India, and quite answers to the description of D. Wightiana, as given in De Candolle's Prodromus. Its heart-wood yields a jet black ebony like D. ebenum and D. exsculpta, but the trees are always small and stunted in the trunk; and Colonel Beddome says all ebony in log comes from D. ebenum and D. exsculpta. It sheds its leaves in the cold season, and they appear again with the flowers yearly in the hot season.—*Bedd. Fl. Sylv.* part vi. p. 67.

DIPALDINI, a ruined city between the ancient city of D'haranikotah and the more modern town of Amaravati, in the Guntur district of the Madras Presidency. It contains the ruins of one of the most magnificent dahgopas ever constructed. Many of the sculptures obtained from it were sent to Great Britain by the Editor, from the Government Central Museum, Madras, and are lodged in the British Museum.

DIPA MALA, a Sikh festival on the 14th of the dark half of Kartik. It means a garland of lights; a pillar in front of a temple, on which lights are put. The Dipmal pedestal is an essential part of every large Hindu temple. It is often of great height, and furnished with niches or brackets, each of which holds a lamp on festivals, especially on that of the Dewali, the feast of lamps, celebrated in the autumn in honour of the Hindu goddess Bahwani or Kali.

The Dipawali, Dipali, or Diwali, is a Hindu festival in honour of the Hindu god Kartakeya, held on the new moon of the month Kartik, in September or October, when lamps are lighted by every one, after a little oil is put on the head to commemorate the killing of Narakasura by Krishna.—*Wilson.*

DIPDAN or Deepdan. Hind. In E Oudh and Benares, is land assigned to Brahmans on the banks of rivers, to deprecate river encroachment. The word is derived from Deep, an island, and Dan, a gift.—*Elliot.*

DIP-DAN Hind. A Hindu ceremony of suspending dipa, a lamp, to a pipal or other tree for ten days, after the death of a relative, in order to light the spirit on its way to Yamapuri, the city of Yama, the judge of the dead. Yamapuri is declared in the Hindu sacred books to be the general rendezvous of the departed from all parts of the world, from which they proceed in a body with a proper guard, composed of the servants of Yama (Pluto) to Dharmapuri. Also, presenting a lamp to the Ganges, setting it afloat on the river lighted, and watching for its extinction, as ominous of future good or ill luck.

Dip-Dan, or lamp-post pillars, are very common in the south of India near Jaina buildings, standing either singly or in pairs, in front of the gopuras. All the Hindu temples are provided with them. They generally consist of a single block of granite, square at base, changing to an octagon, and again to a figure of sixteen sides, with a capital of very elegant shape; some, however, are circular.—*Fergusson; As. Res.* x. p. 145; *Elliot.*

DIPLICUS and Mimulus. Monkey flower.

DIPLOSPORA APIOCARPA. *Dalz.* This large tree grows on the Coimbatore Hills (Matikolam, 4500 feet elevation), on the Sispara Ghat (Neilgherries), and in the Wynad (2800 feet elevation); and Mr. Dalzell found it on the Bombay Ghats. It flowers in the rains, and ripens its fruit in January; timber not known.—*Beddome, Fl. Sylv.* part xix. p. 223.

DIPS or Dibs. Egypt. Honey of sugar, raisins.

DIPSACUS FULLONUM, teasle or fullers' thistle, according to Royle, is the Dunsakoos of the Indian Materia Medica.—*O'Sh.* p. 404.

DIPSAS. *Laurenti.* Bungarus, *Oppel.* A genus of serpents of the family Dipsadidæ, placed by Cuvier under the great genus Coluber:

Dipsas cynodon, *C. and V.*, Thayetmyo, Tenasserim.
D. trigonata, *Schn.*, Subathoo, Jessore.
D. Forsteni, *D. and B.*, Bengal.
D nigro-marginata, *Blyth.*
D. bubalina, *Klein.*
D. multimaculata, *Schl.*, Hong-Kong.
D. multifasciata, *Blyth*, Subathoo.
D. hexagonotus, *Blyth*, Andamans.
D. boops, *Gunth.*, Bengal, Borneo.
D. dendrophila, *Reinw.*, Penang.
D. gokool, *Gray*, Bengal, Penang.
D. Ceylonensis, *Gunth.*, Ceylon.

Dipsas cynodon? *Schlegel.* Scutæ, 240; scutellæ, 110; rows of scales, 21. Only found in forests on the west coast.

Dipsas trigonata, Tati kattaday, Tel.; Peri surutay, Tam. Scuta, 235; scutella, 83. Common in the Karnatic.

DIPSAS, a genus of lepidopterous insects, the larvæ of which have several curious modes of working. Those of D. isocrates occupy the interior of a pomegranate, which they enclose in a web, to prevent it falling.

DIPTERA, an order of insects, gnats, flies, etc., sec. Athericera, fam. Muscidæ, comprising,—

Diopsis Westwoodii, *De Haan*, Java.
D. subnotata, *Westw.*, Philippines.
D. sphyracephala, *Westw.*, Nemuch, India.
D. achias, maculiponnis, *Westw.*, Java.
D. colax variegatus, *Westw.*, Java.

Midas ruficornis occurs in Tranquebar. About fifty species occur in Ceylon, the most troublesome of the mosquitoes being Culex langer, on the coast. The genera Sciara, Ceridomyia, and Simulium have each one species there. The Peepsa, a troublesome dipterous insect, very small and black, floats like a speck before the eye. The bite of this leaves a small spot of extravasated blood under the cuticle, very irritating if not opened.—*Journ. As. Soc. Bengal*, No. xxix. p. 426. See Insects.

DIPTERIS HORSFIELDII and Mationia pectinia are two ferns of Mount Ophir in Malacca. They bear large spreading palmate fronds, on slender stems six or eight feet high.—*Wallace*, p. 31.

DIPTERIX ODORATA. Tonkin bean; Coumarouna odorata. A native of the woods of Guiana, used as a perfume for snuff.—*O'Sh.* p. 304.

DIPTEROCARPEÆ, the camphor tree tribe, a natural order of plants, generally large trees, which grow in the East Indies and Java, viz. Dipterocarpus, Doona, Hopea, Shorea, Vatica, and Vateria, with about 35 species. More than two-thirds of the species inhabit mountainous or hilly parts of the two Peninsulas. In Madras they are all natives of the hilly tracts of

the Balaghat. In Sylhet, Chittagong, and Pegu, where they abound, they, however, occupy the plains. In Java, one species, the Dipterocarpus littoralis, is found on the sea-shore. A Hopea and the Vateria Indica also approach the coast in Malabar, but the latter, or perhaps a distinct species, is also plentiful in Mysore. Two or three species are found in Gumsur, forming extensive forests. Almost every species abounds in a balsamic resinous juice. That from the genera Vatica and Vateria hardens on exposure, and is called dammer, but the exudations from the Dipterocarpi retain their fluidity, and are the wood-oils of the bazars. Some of the species produce a fragrant resin, which is used as incense in the temples. Dammer is used in India for most of the purposes to which pitch and resin are applied in Europe. Wood-oil alone, or thickened with dammer, supplies a useful varnish for wood, possessing the valuable property of repelling for a long time the attacks of white ants, as well as of resisting the influence of the climate. The species abound in Sumatra, Java, and Borneo, and are the chief sources of the dammer of commerce. Borneo tallow is said to be obtained from the seeds of a Dipterocarpus tree, and is generally run, whilst melted, into joints of bamboo. It has a pale greenish tint, is very hard, and approximates nearly to a vegetable wax. Several trees of the genus Dipterocarpus produce a nut, that, when compressed, yields a fatty oil, which, having been recently sent to England, has been used extensively under the names of vegetable tallow and vegetable wax. Three species of this genus are common in Sarawak, under the name of Mencabang. One of them, Mencabang pinang, is valued for its close-grained timber; the others do not grow so large in size, but have larger leaves and fruit. The one most valued for producing the oil is a fine tree growing on the banks of the Sarawak river; it attains the height of forty feet. The leaves being large, and the branches drooping towards the water, give it a very beautiful appearance; its fruit is produced in the greatest profusion about December and January, being as large as a walnut, with two long wings to the seed. These nuts are collected by the natives, and yield a very large proportion of oil, which, on being allowed to cool, takes the consistence of sperm, and in appearance very much resembles that substance. The natives value this as a cooking oil. In England it has proved to be the best lubricating substance for steam machinery, far surpassing even olive oil; and it has been used in Manilla in the manufacture of candles, and found to answer admirably. It will doubtless be applied to many other purposes. From the quickness of its growth, and the great profusion with which it bears its fruit, it will, should the demand for it continue, become a profitable object for cultivation, by which the quality and quantity would most likely be improved and increased. It is also found in Java and Sumatra; and a similar substance has been lately sent from China. In Borneo the oil is called by the natives indifferently, Miniak mencabang, or Miniak tankawan. The wood-oils dissolve caoutchouc, and have medicinal properties similar to copaiba. D. lævis, D. turbinatus, and D. alatus are useful for planking when not exposed to wet; extensively used in the Straits for this purpose in house-building. They are magnificent forest trees, growing straight to the height of 250 feet and more.—*Wight; Voigt*, p. 124; *Crawfurd, Dictionary*, p. 118; *Low's Sarawak; London Ex.* 1862; *Royle, Ill. Him. Bot.; M'Clelland.*

DIPTEROCARPUS ALATUS. *Roxb.*

Battee sal, . . . Beng. | Aing? Burm.
Ka-nyin, ... Burm. | Wood-oil tree, . . Eng.

A magnificent forest tree of Pegu and the Mascal Islands, rising 250 feet in height. It is found chiefly to grow on laterite in the Tounghoo and Prome districts. Its wood is of a light-brown colour. A cubic foot weighs 38 lbs. In a full-grown tree on good soil, the average length of the trunk to the first branch is 100 feet, and average girth measured at 6 feet from the ground, is 25 feet. It sells at 4 annas per cubic foot. This timber is excellent for every purpose of house-building, especially for posts. It is useful for planking when not exposed to wet, and is extensively used in the Straits for house-building; when exposed to wet, however, it rapidly decays, and canoes made of it do not last over three or four years.—*Drs. Roxb.* ii. p. 6, *M'Clelland, Brandis.*

DIPTEROCARPUS ANGUSTIFOLIUS. *Roxb.*

D. costatus, *Roxb.* | Tilla garjan, . . Rakh.

A large tree of Chittagong, furnishing a wood-oil in the largest quantity.—*Roxb.* ii. p. 613.

DIPTEROCARPUS GLANDULOSUS. *Thw.*

Dorana, Singh. A large Ceylon tree, growing in the Saffragam and Ambagamowa districts, at no great elevation.—*Thw.*

DIPTEROCARPUS GRANDIFLORA. *Wall.*

Eng, En, Ain tha, Burm. | Kunnean phiu, . . Burm.

An immense tree of Burma, Pegu, and Tavoy, which grows on the sandy plains near the sea-shore, and on a similar soil in the interior. This tree, in company with a few other kinds, forms extensive forests, which cover upwards of 2000 square miles in the province of Pegu. The wood is somewhat more durable than that of D. alatus, and is used for canoes, house-posts, planking, etc. A cubic foot weighs 55 pounds. In a full-grown tree on good soil the average length of the trunk to the first branch is 60 feet, and the average girth measured at 6 feet from the ground is 10 feet. It sells at 8 annas per cubic foot.—*Drs. Wallich, Brandis, and Mason; Col. Frith.*

DIPTEROCARPUS HISPIDUS. *Thwaites.*

Boohora-gass, Singh. An immense tree of Ceylon, growing in the Saffragam district at no great elevation.—*Thwaites.*

DIPTEROCARPUS INCANUS, a tree of Chittagong. All the tender parts hairy.—*Roxb.*

DIPTEROCARPUS INDICUS. *Bedd.* Common in all the ghat forests of the Peninsula, from Canara down to Cape Comorin; very abundant in S. Canara, where it is called guga. Its timber is very open in the grain, and not durable, but is occasionally used for various purposes; the tree yields a wood-oil, but it is never extracted. The liquid balsam, like copaiba, sold in Trevandrum, and the produce of a tree from those ghats, is not from this tree, but is extracted from the Hardwickii pinnata.—*Beddome, Fl. Sylv.* p. 94.

DIPTEROCARPUS INSIGNIS. *Thw.* An immense tree of the Saffragam district, in Ceylon.—*Thwaites.*

DIPTEROCARPUS LÆVIS. *Buch.*

D. turbinatus, *Roxb.*

Tilea gurjun, . . . Beng. | Ka nyeen phyu, . Burm.
Ka nyeen tha?. . Burm. | Wood-oil tree, . . Eng.
Ka nyeen nee, . . ,, | Horre, . . . Singh.?

This majestic tree grows to a height of 250 feet. It is met with in Assam, Tiperah, Chittagong, Burma, and Pegu, and is very abundant all over the provinces of Amherst, Tavoy, and Mergui, where its wood is used similarly to D. alatus. Dr. Mason says it is a very useful timber, which is sawn into boards at Tavoy and Mergui, and used in house-building. Where not exposed to the wet, they answer as well as teak, and are sold at half the price; they are, however, not impervious to white ants. Captain Dance, who tells us that it is used for rafters and planks, adds that it is an inferior wood, by no means durable, as it rots as soon as it is exposed to water, and shrinks readily. He says that Dr. M'Clelland speaks of this wood more favourably, but thinks he must mean some other wood, as this is decidedly bad, very porous, and when kept the oil oozes out and stands in globules over it. It warps to a great extent, and, though used for cases, does not last for more than about two years. In the cold weather the tree is largely notched near the ground, and the wound charred. After this the oil or balsam begins to ooze out, sometimes forty gallons daily,—a balsam that compares favourably with balsam of copaiba. Maximum girth, 6 cubits; maximum length, 70 feet. When seasoned, floats in water.—*Roxb.* ii. p. 612; *Drs. Mason, Voigt; Captains Dance and Benson; Dr. M'Clelland's Report*, No. 81, p. 135.

DIPTEROCARPUS OBLONGIFOLIUS, *Thw.*, and D. scabridus, *Thw.*, are great trees near Ratnapura, in Ceylon.—*Thwaites.*

DIPTEROCARPUS TUBERCULATUS, *Roxb.*, of Chittagong, D. pilosus of the Mascal Island, are also known.—*Roxb.* ii. 614.

DIPTEROCARPUS TURBINATUS. *Roxb.*

Shweta-garjan, . . Beng. | Hora-gaha, . . . Singh.
Ka-nyin, ... Burm. |

A native of Chittagong, Tiperah, Pegu, etc., to the eastward of Bengal, where it grows to be an immense tree, and is famous all over the eastern parts of India and the Malay Islands, on account of its thin liquid balsam or wood-oil. To procure this balsam, a large notch is cut into the trunk of the tree about 30 inches from the ground, where a fire is kept up until the wood is charred, soon after which the liquid begins to ooze out. A small gutter is cut in the wood to conduct the liquid into a vessel placed to receive it. The average produce of the best trees during the season is said to be sometimes forty gallons. It is found necessary every week to cut off the old charred surfaces and burn it afresh. In large healthy trees, abounding in balsam, they even cut a second notch in some other part of the tree, and clear it as at first. These operations are performed during the months of November to February. Should any of the trees appear sickly the following season, one or more years' respite is given them.

This is the most superb tree to be met with in the Indian forests. It is conspicuous for its gigantic size, and for the straightness and graceful form of its tall unbranched pale-grey trunk, and small symmetrical crown. Many individuals are upwards of 200 feet high, and 15 in girth. Its leaves are broad, glossy, and beautiful; the flowers are not conspicuous; the wood is light-brown, hard, close-grained, and durable, and fit for any purpose for which sal is employed, and is chiefly employed for canoe and boat building.—*Roxburgh*, ii. p. 612; *Rohde's MSS.; Hooker, Him. Jour.* ii. p. 348; *M'Clelland.*

DIPTEROCARPUS UINER. *Blume.* A tree of Java; yields a resin which is substituted for copaiba, like wood-oil.

DIPTEROCARPUS ZEYLANICUS. *Thw.* Hora-gass, Singh. A great tree in Ceylon, abundant up to an elevation of 3000 feet. A cubic foot weighs 75 pounds; and its timber, which is used for the roofs of common buildings, lasts fifteen years.—*Thwaites; Mendis.*

DIRHAM. Pers. Money. A silver coin; 20 or 25 equal one dinar. The dinar is equal to a ducat or sequin, about 9s. Also name of a weight.

Tatariya dirhams are mentioned by Idrisi as current at Mansura and in the Malay Archipelago about A.D. 900. Mr. Thomas supposes them to be coins of the Tahir dynasty then ruling in Khorasan. According to Ibn Khordadbah, who died about A.D. 912, the Tatariya dirhams were current in the country of Hazara; and, according to Ibn Haukal, who wrote about A.D. 977, these dirhams were also current in the kingdom of Gandhara, which at that time included the Panjab. The dirham and the dinar, even in Akbar's time, were considered old coins. The dirham was silver of 6 or 8 dang,—1 dang = 2 qirat; 1 qirat = 2 tassuj; 1 tassuj = 2 habbas.—*Cunningham, Ancient Geo. of India*, p. 313; *Gloss.*

DIRT-BIRD, also Scavenger Bird, Neophron percnopterus, *Linn.*; also called Dung-kite and Pharaoh's chicken.

DIRZI. Hind. A tailor, whether Hindu or Mahomedan. In Hindustan, the Hindu tailors are in clans,—Sri-bastak, Nam-deo, Tanchara, Dhanesh, Panjabi, Gaur, Kantak.

DISC, Aureole, or Gloire, encircling the heads of gods and saints, signifies perfection. It was originally intended, in the Sabæan worship, to represent the solar orb; but in the course of time the symbol was multipliedly added to, and its meanings similarly increased, and in its changes it has represented the sun, the moon, and the whole planetary system. It has been an emblem of monotheism, tritheism, and polytheism, of particular local divinities, as well as of those with universal dominion. It is put round Vishnu's head.

In Egypt, the Delta, Δ, was originally the type of Baal, afterwards of Siva; and when placed with its apex upwards, Δ, was used to denote fire, the element consecrated to the first-named god. When placed with its apex downwards, ∇, it typified Vishnu or water; and there were many other meanings attached to it, some of them very gross.

Discs of steel, from six to nine inches in diameter, and about an inch of breadth of rim, were carried by all Sikh soldiers. The edges are ground very sharp, and, after having gained velocity by being rotated on the forefinger of the right hand, they are projected to a distance of 50 or 80 yards with considerable force, therefore, but with such want of dexterity or impossibility of regulating their flight, that the bystanders are more in danger than the object of the aim. The Chakra, the discus of the god Vishnu, resembling a wheel or quoit, is whirled round the middle finger. The Chakra is mythologically described as a circular mass of fire, darting flames in all directions, which, thrown by the gods, slays the wicked, and then returns to the hand from which

it issued. The Sikh Akali usually had several of them on their conical caps. They are expensive, and are almost useless weapons.

DISCOBOLI, a family of fishes. First group, Cyclopterina; second group, Liparidina.

DISCOGLOSSIDÆ, a family of reptiles, comprising the genera Megalophrys, Xenophrys, Cacopus.

DISCOGNATHUS NASUTUS, hill-trout.

DISEASE. Hindu sages suppose that diseases are either produced by sins committed in a former state of existence, by derangements of the humours, or by the combination of these two causes. The former are removed by sacrifices, prayers, penance, and gifts; the latter by remedies, regimen, medicine, or surgery. There are also accidental diseases. Simple medicines may be arranged according as they cure deranged air, bile, or phlegm.

DISHA, an Arabian astronomer who flourished in India.

DISMAS and Jesmas, according to Mahomedan tradition, the penitent and impenitent thieves of the gospel.

DISTILLERIES. The principal matters distilled from in India are palm wines, dates, sugar, rice, mahwa flowers, barks, cereals, and substances yielding perfumes. Under native rule, the abkari, or government excise system, was an item in the revenue arrangements of the proprietor of every estate, and he made his own arrangements with the distillers resident thereon. There were one or more small distilleries in almost every village, consisting of an oven, chūlha, and reservoir (garha). In the latter were placed earthen vessels (kunda), into which was placed the material to be distilled, and the product was designated rasi, or fourth quality, which sold at 3¼ annas a garha; tharra or third quality, at 6¼ annas; phūl or second quality, at 12 annas; and tapka, or first quality, at 12 annas. A garha was equal to eight bottles. The British Indian Government early suppressed these small stills, and introduced the system of distilleries at the chief stations, which are farmed out to the highest bidder; and the spirits are called once-distilled (ekbara) or double-distilled (do-atasha), according as they have passed once or twice through the still. The mahwa flower of the Bassia latifolia ferments in from five to nine days, and gūr from eight to fifteen days, according to the heat of the weather. A maund or man of mahwa flowers yields four gallons in summer and five gallons in winter of a spirit between 25° or 30°. In the same way, a maund of gur will yield four and three gallons, according to the season.

The Bombay toddy or arrack still consists of a large earthen jar, of the shape of that used by water carriers, but many times more capacious. The receiver is of the same form and material as the still, but somewhat smaller in size,—the former being two and a half, the latter one and a half, feet in diameter. The still mouth is plugged up with a piece of wood luted with clay; a hole is cut in the side of the still near the top, and into this is fastened a wooden spout, which conveys the spirituous vapour to the cooler. This last stands on a tressle or frame of wood, placed over a pit for holding water, and cooling is effected by a man lifting successive fills of water from the well in a cocoanut ladle and pouring it on the top of the cooler. A vessel of water with a small spout or drip is occasionally resorted to.

A cocoanut tree will yield about 4 seers of toddy or sap a day. Seventy-five seers of toddy, or the produce for one day of 18 cocoanut trees, furnish a charge for a still; yield 25 seers of liquor on a first distillation; on the second it affords 8 seers of liquor, considerably under proof. The process of distillation just described is nearly as unskilful as can be; and a third, if not a half, might be added to the returns were a little more care and attention bestowed on the matter. Date and palmyra trees yield toddy as well as cocoanuts.

A strong alcoholic liquor, called mawah, is in popular repute amongst the natives in Western India. The following process is employed in making it at Surat. The berries of the mawah are about the size and form of marbles. They are first steeped or mashed in casks. So soon as they get into a state of active fermentation, the fermented liquor is drawn off and carried to the still, and more water poured over the berries, successive charges being added as long as the worts are strong enough to ferment. A sufficient number of casks, or mash tuns, as they may be called, are employed in the work, so as to permit a charge of the still to be supplied on each drawing off from the fermenting tuns, as it takes a couple of days to complete the process of fermentation; but worts already drawn off would sour were this to be waited for before the first run was run off. The still consists of a wooden tub, with a copper bottom, built over a surface of brickwork; over the mouth of this is placed a huge copper saucer, the centre of the bottom terminating in a nipple. This is placed over the mouth of the tub which contains the liquor, and is fitted tight after the still has been charged; it is then filled with cold water, a fresh supply of which is poured into it from time to time as the original fill gets heated. A bamboo spout passes through the side of the tub just above the level of the liquor inside; it terminates in a flat shovel or ladle-shaped dish under the nipple. Into this the spirit condensed in the under side of the saucer trickles down; it is run off and removed into a suitable receptacle outside. A second or third distillation is resorted to when the liquor is required to be made very strong.

The Portuguese in India, for the purpose of rectification, use a very neat and serviceable variety of still, by them called an alembic. It consists of a common cooking pot as a boiler, with a cylindrical head of the same diameter, and generally about the same depth as the boiler. The bottom of this is a cone closed in at the apex, the mouth of which covers that of the boiler. Around its inner edge is a slight turned-up ledging or flange, from which a pipe or worm leads off the spirit. The cylindrical portion of the top being filled with cold water, the spirituous vapour is condensed by it in the inside of the cone, and, trickling down, is caught by the flange and carried off by the pipe. This is a convenient and serviceable implement, and may be so used to give very excellent results.

In the Panjab, the first spirit that passes over is called phul and ek-atasha, or once-distilled. This is collected in vessels and distilled again in another still; when the spirit passes over, it

is called do-atasha, or double-distilled. This is of two qualities, according to strength. In the Panjab the spices and flavourings, or mesalih, used in distilling, are the following:—Sak, or bark of the kikar, which is often erroneously supposed itself to yield a spirit on distillation, but is only added to promote and accelerate the fermentation of the molasses, etc.; triphalla, the three myrobalans, mixed together as an astringent; rose leaves; lotus flowers (nilofar); gaozaban (Cacalia Kleinii); violets; anise seed (badyan); limes and lemon peel (sangtara); saffron; sandalwood, red and white; mundi buti (sphæranthus); kashnuz (coriander); adrak (ginger); ilachi (cardamoms); musli; darchini (cassia or cinnamon); gajar (carrots dry and fresh); motya (jessamine); seb (apples); naspati (pears); shir (milk); raughan, ghi; meat (?); misri (sugar); tamal patr (aromatic leaves); taj (aromatic flavouring leaves); bed-musk (willow flowers); kasturi (musk); ambar (ambergris); khawi (Anatherium muricatum); khas, root of the latter; chob-chini (Smilax china); salep misri,—are all distilled from.

Distilled waters contain a little of the volatile principles of plants, and may be distilled either off the plants, or by distilling some essential oil with water.—*Powell; O'Shaughnessy; Carnegy.*

DITA, a tree of Mindoro. Its sap, mixed with an infusion of the abyab, or rind of the fruit of the Sago palm (Cabo negro), is used by the wild tribes of Mindoro to poison their arrows.

DIT'HWAN, the Ekadasi, or 11th of the bright half of the moon Kartik, is a day also known to the Hindus of Northern India, by the name of Bodini. On this day a ceremony with music and singing is observed in celebration of Vishnu's return from his slumber of four months, during which he is represented to have been with Raja Bul in Patala, or the infernal regions. The Mudra Rakshasha, a Sanskrit play, says:

'May Vishnu's shrinking glance
Yield peace and joy, as, waking from his trance,
His opening eyes are dazzled by the rays
From lamps divine that blaze:
Those eyes that, with long slumber red,
Ambrosial tear-drops shed,
As, pillowed on his snake-couch 'mid the deep,
He breaks reluctant from his fated sleep.'

It is the close of the rainy season. No marriages, and but few festive ceremonies, have taken place in the meantime, and the Dit'hwan is the signal for their commencement. Houses are cleaned, and smeared afresh with cow-dung. The fruit of the sing'hara, ber, and chunaka-sag, and other dainties of the season, may be lawfully enjoyed (Elliot's Suppl. Gloss.), and the sugar-cane is commenced to be cut, the cultivators bringing home a small quantity of it from a corner of the field, and spreading it out for the reception of the salagram, an ammonite regarded as a type of Vishnu, afterwards cut it at a fortunate hour.

DITI. Sansk. A Kala, or part of the Mula Prakriti.

DITI, the wife of Daksha; also one of the two wives of Kasyapa (Lamech), mother of the Asura or Daitya, who were destroyed by the flood.

DITTANY. Lung-tan-tsau, Chin. The root of a species of Dictamnus.—*Smith.*

DIU, a small barren island, 6¼ miles long and 1 broad, on the S. coast of Kattyawar. It forms part of the Portuguese possessions in India. A fort was built on it in A.D. 1513. It is separated from the mainland by a shallow strait only navigable by boats at high water. Diu is in lat. 20° 43′ 20″ N., long. 71° 2′ 30″ E., at the entrance of the Gulf of Cambay, near the southern extremity of the peninsula of Gujerat; population, 10,765. The town has been repeatedly besieged by rulers of Gujerat and the Dekhan, but it continues in the power of the Portuguese. The convent of St. Francis is used as a military hospital, that of St. John of God as a place of burial, that of St. Dominic is in ruins.—*Imp. Gaz.; Postans' Western India*, i. p. 112; *Horsburgh; Findlay.*

DIV. Sansk. From Div, the sky, hence the Latin Deus. Divas Pati, lord of heaven, from Div, heaven, Pati, lord.

DIVAKARA. Sansk. From Diva, day, and Kara, from Kree, to do, a name of the sun, under which it was worshipped in Sakadwipa.

DIVE PARRE. Singh. A wood of the western province of Ceylon, used in common house buildings. A cubic foot weighs 44 lbs., and the timber lasts 20 years.—*Mr. Mendis.*

DIVI-DIVI, Dibi-dibi, or Libi-libi, are the seed-pods of Cæsalpinia coriaria, a plant of South American origin, belonging to the natural order Cæsalpiniæ, naturalized in India, and now grown at several places in the Madras and Bengal Presidencies. The seed-pods have been extensively used for tanning leather, and for this purpose are considered superior to all the Indian astringents. Leather tanned in this way is considered equal to that of the best of European manufacture. The average produce of pods from a full-grown tree has been estimated at 100 lbs. weight, one-fourth of which consists of seeds or refuse, leaving about 75 lbs. of marketable matter. Divi-divi pods are of a dark-brown colour externally when ripe, transversely wrinkled and curled, from 1 to 3 inches long, and ¾ of an inch wide, and contain 2 to 4 seeds. The outer skin of the pods is very thin, and peels off easily if the pods are ripe. Underneath it, and separated from the seeds by a layer of woody fibre, is a considerable thickness of astringent matter of a light yellow colour, almost pure tannin, as met with in commerce. At an interval of 6 feet apart, an acre of ground will contain 1210 trees, yielding an average of 810 cwts. and 30 lbs. of divi-divi, or above 20½ tons of marketable matter, worth, at only £5 per ton, £200. Its tannin differs materially from that of nutgalls. The quantity of mucilage it contains precludes it from the use of dyers, but it is largely used by curriers. One part of divi-divi is sufficient for tanning as much leather as four parts of bark, and the process occupies only one-third of the time. The selling price ranges from £8 to £13 per ton. The imports into the United Kingdom from 1844 to 1850 ranged from 10 tons to 3900 tons.—*Jur. Rep. Mad. Ex.* 1855; *Indian Annals*, vii. p. 120; *Simmonds' Comm. Prod.*

DIVI LADNER, the forbidden fruit of the Ceylonese, is the produce of a species of Tabernæmontana.—*Eng. Cyc.* ii. p. 365.

DIVINATION.

Ahnung, Wahrsagung, Ger.	Balli, ... Singh.
Indovinamento, . . It.	Divinacion, ... Sp.

In all ages there have been seers, prophets, miracle-workers, exorcists, as there are now Shamans amongst the Mongols, Payang amongst

the Malays, who are resorted to on all occasions of importance,—as for instance the fixing on a propitious day to commence a journey or any undertaking. The commonest system is analogous to the Roman 'sortes.' With Mahomedans a Koran is used for this purpose. They have also books filled with sentences and words. The Malay consulting them cuts in with a kris, and the sentence marked by the kris point is interpreted to suit the wants and wishes of all parties. In the *Allu* ordeal of the Hindus of Gujerat, a cloth or a raw hide is dedicated to one of the forms of Durga. The claimant of a disputed boundary puts it over his shoulders and walks over the contested limits. In Sind, the *Son* or *Sugum* is a kind of divination by means of the position of birds and beasts,—their cry, the direction of their flight, and other such particulars. The divination by lots, auguries, and omens by flights of birds, as practised by the Getic nations, and described by Herodotus, and amongst the Germans by Tacitus, are to be found amongst the Rajputs. Their books on the subject could supply the whole of the augurs and aruspices, German or Roman. The Mahomedans in India often cast lots; and in Sind is a practice similar to that of the mountaineers of Scotland, called sleinanachd, or 'reading the speal-bone,' or the blade-bone of a shoulder of mutton. One very common mode of divination in Persia is called the *Ilm-i-shoona*, or 'science of the shoulder-blade,' and practised by cutting out the blade-bone of a sheep newly killed, and examining the lines and marks upon it. This was common in England in old times, and in Scotland till the 18th century. Pennant gives an account of a Highlander in the Isle of Skye foretelling the event of the battle of Culloden by this means. Confucius gave rules for this species of sorcery. The poet Drayton alludes to the practice of this amongst the 'Dutch-made English,' settled about Pembrokeshire, in his Polyalbion, song 5. Camden notices the same superstition in Ireland.

The ordeal of taking a piece of gold out of a pot of hot oil, *Karahi lena*, is common in India. If the accused do so without being scalded, he is deemed innocent. The ordeal amongst the Hindus called *Dibya* or *Divya*, is from a Sanskrit word meaning Divine. In the *Tola*, or weighing ordeal, the accused is weighed; then certain ceremonies are performed, and he is again weighed, and if found lighter, he is guilty. In *Agni*, or fire ordeal, the accused touches fire or heated metal, and if burned, he is guilty. In *Jala*, or water ordeal, the accused is dipped under water, whilst an arrow is shot, and a person runs and brings it. If the accused be still alive, he is innocent. Or the accused is sewed up in a sack, which is let down into water about three feet deep. If the person in the sack can get his head above water, he is a witch. In the poison or *Visha* ordeal, if the accused swallow it with impunity, he is innocent. Others are the *Kosha*, or drinking holy water, the *Tandula*, or chewing grains of rice, the *Tapta-masha* or taking a masha weight of gold out of a jar of hot oil or butter. In the *Dharmarcha* or *Dharmadharma* ordeal, drawings of Dharma and Adharma, virtue and vice, are covered with cow-dung, and put in a covered vessel, from which the accused draws one. In the *Tulasi*, the leaves of the tulsi and water are swallowed after an oath, the tulsi being sacred to Vishnu. In the *Kach'a ghara*, or unbaked pot, such a pot is filled with water and carried to some distance without spilling. *Belbhandna* is swearing by the leaves of the bel, which is sacred to Siva. *Gangajalla*, swearing on the Ganges water. *Devala* or *Devalaya*, swearing in a temple, before an image. *Gao*, a cow, swearing while holding a cow's tail. *Brahman*, swearing while touching the feet of a Brahman. *Sima* or *Simba*, the ceremony, after religious rites, of pointing out a boundary. In Hinduism nine ordeals were recognised. In trivial cases, a few grains of rice that have been weighed with the Salagrama are put into the mouth of the suspected or accused person, who chews them and spits them out on a pipal leaf. If the person be innocent, the grain appears as if stained with blood; if guilty, the rice is dry. In the trial by *Kosha*, or image water, the accused person drinks some of the water with which an idol has been washed, and if the accused survive free from calamity through the next fortnight, he is innocent. The *Tola*, or ordeal of the balance, is applied to women, children, the aged, blind, lame, and sick men, and to Brahmans. After a fast of 24 hours, both of the accused and the priest, the accused bathes in holy water, prayers are offered up, and oblations are presented to fire. The beam of the balance is then adjusted, the cord fixed, and the accuracy of the scales ascertained. The accused then sits in the scale, and, while being weighed, the priests prostrate themselves, repeat certain incantations, and, after an interval of six minutes, the accusation paper with the written accusation is bound around the head of the accused, who invokes the balance thus: 'Thou, O balance, art the mansion of truth; thou wast anciently contrived by the deities: declare the truth, therefore, O giver of success, and clear me from all suspicion. If I am guilty, oh! venerable as my own mother, then sink me down; but if innocent, then raise me aloft.' The accused is then re-weighed; if he then weigh heavier, he is found guilty, but if lighter, he goes free. In the *Agni*, trial by fire, the accused, in India, walks barefoot into a mass of burning pipal leaves (Ficus religiosa); in Siam, over a pit filled with burning charcoal. In the ordeal by boiling oil, the accused has to thrust the hand into the scalding fluid. In the hot iron ordeal, nine circles are drawn, each 16 fingers in diameter, and each the same distance of 16 fingers apart. The hands of the accused are rubbed with unhusked rice (paddy), and all marks on them carefully noted; seven pipal leaves are then bound with seven threads on each hand, and the priest gives him a red-hot ball to carry as he steps from circle to circle, keeping his feet within each, until he reaches the eighth, when he throws the ball on a heap of dried grass inside the circle. If his hands, which are then examined, be not burned, he is pronounced innocent. In Japan, a reputed thief bears on his hand a piece of thin paper having the figures of three deities. On this a piece of red-hot iron is placed, and if his hand escape, he is pronounced free. The Hejaz Arab licks red-hot iron as an ordeal. In other forms, the *Jala* or water ordeal is in vogue in India, in Burma, and in Borneo. In India, the accused stands in water nearly up to his waist, attended by a Brahman, staff in hand. A person near shoots three arrows from a bamboo bow, and a man hurries to pick up the further-

most shaft. As he takes it from the ground, another person runs towards him from the water's edge; at the same moment the accused grasps the Brahman's staff and dives beneath the water. If he remain there till the two arrow-fetchers return, he is innocent; but if any part of his body appear, he is guilty. In Burma, a stake is driven into the water; the accuser and accused take hold and together plunge beneath the water, and he who remains longer submerged is declared to have truth on his side. In Bustar, the *Leaf-ordeal* is followed by sewing up the accused in a sack, and letting him down into water waist-deep; if he manage in his struggles for life to raise his head above water, he is finally adjudged to be guilty. Then comes the punishment of extracting the teeth. This is said in Bustar to be effected with the idea of preventing the witch from muttering charms, but in Kamaon the object of the operation is rather to prevent her from doing mischief under the form of a tigress, which is the Indian equivalent of the loup-garou of Europe. In the *Poison* ordeal, white arsenic and butter in a mixture is administered. In the snake ordeal, a cobra and a ring are placed in an earthen pot, and the accused has to withdraw the ring. In the idol ordeal, two images, one called *Dharma*, or Justice, the other *Adharma*, or Injustice, are placed in a jar, and the accused is allowed to draw. If the dharma image be withdrawn, he is innocent. The Borneo Dyaks place two pieces of *Salt* in the water, to represent the accuser and accused, and the owner of the piece dissolving the first loses the cause. Also, two shells are placed on a plate and lime-juice squeezed over them, and he whose shell moves first is pronounced guilty or innocent, as may have been resolved on. But the more common mode amongst the Dyaks is for the accuser and the accused to plunge their heads beneath the water, and he who remains longer is free. The Binjari people use the branch of a nim tree, the Azadarachta Indica. A husband throws it on the ground, and, turning to his wife, says, 'If thou be a true woman to me, lift that nim branch.' *Arrows* are sometimes used in North-Western India as tests of innocence. The opposite ends of two arrows are held by a rattan laid upon the hands by two persons placed opposite to each other; they are parallel to and just sufficiently apart to allow of the suspected person's hand being held between them. The ends of the arrows merely rest upon the fingers. The arrows are supposed to move towards and close upon the guilty hand.

Amulets (totka, tawiz; hirz; ta'it, jantar, nadli) are worn by almost all Eastern nations. They are especially prized by Mahomedans, both young and old of whom wear them. They are usually put on the young to ward off disease, and to guard from the evil eye, and consist of figures with numbers on pieces of paper, or Arabic words, often extracts from the Koran, engraved on pot-stone or silver or gold, and worn from the neck. They are also put over the door-porch or on the house-wall. Amongst the Malays of Java, Mustika means amulet, which is always some very scarce substance, and which, being worn about the person, they are supposed to act as a talisman, and ward off evil. The mustika kerbo, or buffalo amulet, is quite white, and round like a marble, nearly an inch in diameter, and semi-transparent; it is stated to be found at Panggul. The mustika waringin, a calcareous concretion, is found at Ngadi Rejo. It is quite black, and a little smaller than the mustika kerbo.

Arati, TAM., is a Hindu ceremony for warding off the evil eye.

The Romans had peculiar modes of divination,—their dies fasti, nefasti, their auguries, etc. Tacitus informs us that among the ancient Germans, who were originally Scythians, the prototype of rhabdomancy was engraven on rods. The Chinese had also rods with similar inscriptions. The Arabs, before the birth of Mahomed, divined by bundles of arrows in the Kaba. Mahomed destroyed this practice.

The practice of astrology at the present day in Ceylon, and the preparation of the ephmeres predicting the weather and other particulars of the forthcoming year, appear to have undergone little or no change since this custom of the inhabitants of India was described by Arrian and Strabo. But in later times the Brahmans and the Buddhists have superadded to that occupation the casting of nativities and the composition of horoscopes for individuals, from which the Sophistæ described by Arrian abstained. It is practised alike by the highest and most humble castes of Singhalese and Buddhists, from the Vellala, or agricultural aristocracy, to the beaters of tom-toms, who have thus acquired the title of Nakatiya or astrologers. The attendance on particular ceremonies, however, called Bali, which are connected with divination, belongs exclusively to the latter class. The Mahomedans of British India keep their calendar (Jantri), and the Hindu Joshi calculates the ephmeris. The Hindus also have their calendar or Panjangam, but they all practise divination from books, for which the Chintamini Pastakam is in use in the south of India.—*Wilson's Glossary; Burton's Scinde; Tod's Rajasthan; Tennant's Christianity in Ceylon; Jour. Ind. Archi.* 1853, 1857; *Milner's Seven Churches of Asia*, p. 127; *Rasamala, Hindu Annals*, ii. p. 403; *Ouseley's Travels*, i. p. 227; *Skinner's Overland Journ.* ii. p. 70; *Ward's Hindoos*, ii. p. 71; *Herklots; Burton's Mecca*, iii. p. 255; *Lyell's Studies.*

DIVO DASA, the titular appellation of several kings and illustrious persons, viz. a king named in the Rig Veda; a Brahman, twin brother of Ahalya; also a king of Kasi, who, with all his family, was slain by a king named Vita-hanya. His son Pratardana avenged the slaughter of his relatives.—*Dowson.*

DIVORCE.

Ehescheidung, . . GER.	Divorzio, ... IT.
Talaq, ... HIND.	Divorcio, ... SP.

The Hindu law does not admit of divorce. The Buddhist Burmese laws allow every facility for divorce. An appeal case heard by the privy council illustrates the Mahomedan law of divorce. A moonshi wished to divorce his wife, without which a second wife would not have him, but he wished at the same time to avoid paying the first wife's dowry, amounting to Rs. 26,000. He had two modes of proceeding, either by his own arbitrary act to repudiate his wife, in which case he must restore the dowry, or to divorce the woman with her own consent (khola), in which case he may keep the dowry, or make any arrangement regarding it. After a divorce, the

woman must remain some months in seclusion, and be maintained by her late husband, till all chance of children has passed away. In a recent case, the husband, by ill-usage of his wife, induced her mother to give up the marriage settlement, and so proceeded by the khola method, keeping the dowry; but the subordinate and appellate courts decreed the restoration of the dowry, on the ground of force being used. Mahomedans in India follow the Koran and Sharra, and marry to four wives, though some take into their households a far greater number of women, under different designations. Mrs. Mir Husain Ali had heard of princes in Hindustan possessing seven or eight hundred, and Tipu Sultan had no less than nine hundred women. In Madras, some of these are known as the Harm, which term is there applied to purchased women associating with their lord, but in Hindustan such are termed Doolee wives. These are not the Kaneez, or slave girls, who are servants. There are three forms of Talaq, repudiation or divorce, amongst Mahomedans in India. 1st. Talaq-i-byn, which consists in the husband only once saying to his wife, 'I have divorced' you; 2d. Talaq-i-rujaee, in repeating the same twice; and 3d. Talaq-i-mootuluqa, in three similar repetitions. Mahomedan lawyers say there are 16 various kinds:—Talaq-i-ahsan, T.-i-rujai, T.-i-sunna, T.-i-bidat, T. kinaat, T. muajjal, T. sarih, Aila, Istisna, Khala, Lan, Mubarat, Yamin, Zihar, Tafwiz-ul-talah. In China, divorces are frequent; the divorced wife is sometimes provided for, or is remarried. Chinese divorces are granted for desertion, unchastity, striking the husband's parents.

DIWALI, thin plates of gold and silver prepared for the gold-beater.

DIWALI.

Dipauli, ...	HIND.	Dipali, ...	HIND.
Deuli, ...	,,	Dewaligeicha, .	KARN.

The Diwali is a popular Hindu festival on the two last days of the dark half of the month Aswin, and the new moon and four following days of Kartik (September—October). Appropriate ceremonies are performed on each day, but on the last the night is to be spent in merry-making and festivity, and illuminations are to be made in honour of deceased ancestors. The goddess Lakshmi is also to be worshipped in the night of the festival, and games of chance played in her honour. Amongst the Mahrattas, it is the commencement of the commercial year, over which Lakshmi especially presides, and accounts are opened by bankers and merchants for the smallest sums—a few rupees—as omens of success. Bankruptcies are also declared at this season.

DIWAN, in Persian poetry, a complete series of odes or other poems, the rhymes terminating from alif to ye in each letter of the alphabet. The Diwan-i-Hafiz and that of Jami are celebrated.—*Gloss.*

DIWAN. ARAB., HIND., PERS. A royal court, a chief officer of state. The title of Diwan or office of Diwani was conferred upon the East India Company by Shah Alam in 1765, giving the right to collect the whole revenues of Bengal, Behar, and Orissa.

Diwan Khanah, amongst Mahomedans, the common hall or place of reception. It has a line of flat cushions ranged round the room, either placed upon the ground, or on wooden benches, or on a step of masonry, varying in height, according to the fashion of the day. When such foundation is used, it should be about a yard in breadth, and slope very gently from the outer edge towards the wall, for the greater convenience of reclining. Cotton-stuffed pillows, covered with chintz for summer, and silk for winter, are placed against the wall, and can be moved to make a luxurious heap; their covers are generally all of the same colour, except those at the end. The seat of honour is denoted by a small square cotton-stuffed silk coverlet, placed on one of the covers, which the position of the windows determines.

DIXON, COLONEL CHARLES GEORGE, an officer of the Bengal artillery, which he joined on the 14th August 1813. He served throughout the Nepal war in 1814, 1815, and 1816; was present at the siege and bombardment of Hatras in 1817; was Quartermaster to the artillery and pioneers with the right division of the Grand Army during the Pindari campaign of 1817-18. In 1820-21, was present with the force which subjugated Mhairwara. In May 1835 he was appointed to its civil charge, and in January 1836, Commandant of the Mhairwara Battalion. In March 1839, the Mhair corps, in conjunction with the Jodhpur Legion, completely routed a large body of outlaws at Kot in Mhairwara, and killed their chiefs, with one hundred followers. In February 1842, the jurisdiction of Ajmir was added to that of Mhairwara, and he was appointed Commissioner of Ajmir in March 1853. The Mhair are one of the bravest, and were amongst the most predatory, of the non-Aryan races in India. Colonel Dixon built a new town, and encouraged shopkeepers to settle in it. Gradually the whole population became attached to industrial pursuits. Up to A.D. 1838, the district was wholly dependent on supplies brought in (chiefly by plunder) from a distance. But by 1850 the population had much increased, and the sounds of honourable industry were heard on the face of those long-troubled hills in some of its most benignant forms. He wrote a Sketch of Mhairwara, 1850; also Ajmir and Mhairwara Revenue Settlement, 1853.

DIYAR BAKR, on the Tigris, in its prosperity contained 40,000 houses, with numerous cotton looms constantly at work, and it enjoyed an active trade in gall-nuts, not only with Kurdistan, but also with India on one side, through Baghdad, and with Europe, through Aleppo, on the other; but at present there are scarcely 8000 houses, 1500 Armenians and 6300 Turks, and its commerce is almost annihilated. Below Diyar Bakr, the Tigris contains several islands. Its banks are thinly peopled, and the country about them is only partially cultivated; but the pasture grounds are rich, and well suited for the visits of the nomadic tribes which come occasionally to the river from the neighbouring countries. The windings of the Diyar Bakr river thus far have a length of rather more than 150 miles, whilst those of the tributary by Myafarekin are less than 100 miles.

DIZABULUS, a Mongol ruler of the 13th or 14th century, who is described as seated on a couch that was all of gold, and in the middle of the pavilion were drinking vessels and flagons and great jars of the same metal. At the entrance

of the tent there was a bench with cosmos (kumis, or fermented mare's milk), and great goblets of gold and silver set with precious stones. Shah Rukh's description in the 15th century of the constant drinking there corresponds exactly to the account of the habits of the Mongol court in Plano Carpini and Rubruquis (A.D. 1253). The former, on the occasion of Kuyuk Khan's formal enthroning, says that after the homage had been done they began to drink, and, as their way is, continued drinking till hour of vespers (p. 758). Rubruquis's account of his residence at the court of Mangu Khan is quite redolent of drink, from which one sees how Sultan Baber came by his propensity to strong drink.—*Shah Rukh's Embassy: Yule, Cathay*, i. p. 164.

DIZFUL, an important stream in Khuzistan. The bed of an occasional torrent in ancient Susiana, called Ab-i-Bald, which falls into the Dizful, is covered with a peculiar kind of pebble, which, being filled with little fossil shells resembling grains of rice, is called Sang-i-birinj, or rice stone. These stones are also found in the river at Shuster. They are in much request throughout Persia for the head of the nargil pipe, which is almost invariably composed of this material, set in silver. See Khuzistan; Luristan; Sabi; Susa.

DJ, with the nations of continental Europe, are used to obtain the sound of the English j; thus Djamal, a camel, Djabal, a mountain. Similarly, tch is used for the English ch.

DO. HIND., PERS. Two; hence Dohra, double; Do-patta, a sheet of double breadth; Do-shala, a double shawl; Do-suta, double thread; Do-bara or Do-atasha, twice or double distilled, or over-proof spirit. Do-ab, a mesopotamia of two rivers; Do-fasli, land yielding two crops annually; Do-hartha and Do-mala, a double water-wheel; Do-mat, also Do-shahi, two soils.

DOAB. HIND., PERS. From Do, two, and Ab, water, a country lying between two rivers, a mesopotamia. In British India, people speak of the Doabs of the Ganges and Jumna, of the Godavery and Kistna, of the Tumbudra and Kistna, the Raichore Doab, etc. The five Doabs of the Panjab are fertile as far as the river influence extends, but have in the centre a high arid tract called Bar. The names of the Doabs of the Panjab are in all instances, excepting the first or Jalandhar Doab, the result of a rough attempt to join the names of the rivers on each side into one word. Thus the Panjab is traversed by six rivers, which, running in a south-westerly course to their places of junction, partition the country into five Doabs. The Jalandhar Doab is between the Sutlej and the Beas. The other four Doabs are still popularly known by those names which were given them in the days of Moghul ascendency. The Bari lies between the Beas and the Ravi, the Rechna between the Ravi and the Chenab, the Chuj between the Chenab and the Jhelum; the fourth, enclosed by the Jhelum and the Indus, takes its title from the latter, and is styled the Sind Saugur, or Ocean of the Indus. Of these the Bari Doab carries off the palm, as containing the central Manja, or home of the Sikh nation, and the three greatest cities, Lahore, Amritsar, and Multan. It is by far the most populous, as well as the most important, whether in a political, commercial, or an agricultural point of view. It has also the sanatorium of Dalhousie near the Kalatop forest, and the district of Montgomery to the south of Lahore. This Doab has two features, viz. a flat alluvial tract, called Dhaya, several miles broad, running along either river, and producing tamarisk and jhand. Also an elevated dorsal plateau in the Manja or middle part, and called Ganj-i-bar, or bald country. Its soil is intensely arid, often saline, and produces only some salsolaceous plants and a few bushes of jhand. The Bari Doab (sometimes called Manja, whence the Sikhs resident here are called Manja Singh), between the Ravi and Beas, is the narrowest of the Doabs.

The district lying between the Indus and the Jhelum, called the *Sind Saugur* Doab, is 147 miles broad in the widest part, and whilst it is the largest, is the most sterile and least inhabited, abounding with undulating bare eminences and rugged declivities.

The *Rechna* Doab, between the Chenab and the Ravi, is seventy-six miles in its widest part, and consists of an arid plain.

The *Julandhar* Doab, the smallest, is in a better condition than the other intra-fluvian tracts.

The *Gangetic* Doab, the Anterved of the ancient Hindus, is the Doab or Mesopotamia of the Jumna and Ganges. From the narrow point in which it terminates, the valley broadens as it stretches away towards the west, embracing a greater and greater area between the Ganges and Jumna. The whole of its immense superficies forms a vast, populous, and busy hive, enriched by human industry, and embellished by human taste. On the map no country is so thickly dotted with great townships and cities, and under the sun no country makes up such a highly interesting prospect of green fields, orchards, and gardens, in a continuous succession. In this fair savannah man has had his abode from a remote antiquity, to reap rich harvests, and live amidst plenty. Here were the cities of the pre-Vedic Dasya races. Here rose the first cities of the Arya race. In the plains of the Doab, the rajas of Hastinapur, of Indraprasthra, and of Kanouj exhibited the highest power and splendour of Hindu sovereignty. The rich districts watered by the Ganges and Jumna have always tempted the avarice of the foreign conqueror. Here was the residence of the most famous Hindu sages. From this birthplace of arts and civilisation wisdom travelled to the West. This Doab is the battle-ground of the Pandu against the Kuru, of the Ghiznivide and Ghorian against the Hindu, of the Moghul against the Patan, the Mahratta against the Moghul, and of the British against the Mahratta, where many a spot is hallowed by tradition, and many a ruin is consecrated by history. In this Doab almost every inch of land is under the plough. Here the rural population is more intelligent and spirited than the same class in Bengal. The humblest Doabi lives upon better food, and covers his body with more abundant clothing, than the humblest Bengali. The cattle here are various. Camels, buffaloes, horses, donkeys, and oxen are all made to assist man in his labours. The fondness of the Doabi women for coloured millinery evinces a more refined female taste, and to them may remotely be traced the impetus which is given to the various dye-manufactures of the country. The agricultural women of the Doab use ornaments of brass and bell-metal. The same class in Bengal

is in the habit of wearing shell ornaments, and a pair of Dacca shell-bracelets may sometimes cost the sum of two hundred and fifty rupees. One particular ornament in general use amongst the Doabi women of both the upper and the lower classes, is the tika, which is in the shape of a tiny crescent made of gold, silver, or tinsel, according as the wearer is circumstanced. It is fixed with an adhesive substance on the forehead, just between the eyebrows. These tika are not a little prized and coveted by the Hindustani young men. They train the baya to execute little commissions of gallantry. On a given signal, the bird goes, seizes and carries off the tika from the forehead of a woman, as precious booty, to her pining lover. This Doab, like Bengal, is flat and alluvial. The vast plain is uninterrupted by a single eminence; but the soil and climate differ. The tall and robust figure, the firm step, the stern eye, and the erect bearing of the manly Hindustani are everywhere to be seen. In Bengal the oxen alone form beasts of burden. A Hindustani coolie takes the load over the waist, and not upon the head. The Calcutta Baboos do not know what it is to ride. In Hindustan, rural women perform journeys on horseback, and princesses discuss the merits of horsemanship. The people of the Doab have for the most part well-formed features.

In India, the country between the Ganges and Jumna (Jamuna) is especially known as *the* Doab. It includes the whole wedge of land enclosed between the confluent streams of the Ganges and the Jumna, comprising the districts of Saharanpur, Muzaffarnagar, Meerut, Agra, Mainpuri, Etah, Farrakhabad, Etawa, Cawnpur, Futtehpur, and part of Allahabad. The irregular horn-shaped tongue of country thus enclosed runs in a sweeping south-eastward curve, following the general direction of the Ganges watershed from the Siwaliks to Allahabad. On either side the great rivers flow through low-lying valleys, fertilized by their overflow or percolation, while a high bank leads up to the central upland, which consists of the older deposits. This central plateau, though naturally dry and unproductive, except when irrigated by wells, has been transformed into an almost unbroken sheet of cultivation by three great systems of irrigation works,—the Ganges, the Lower Ganges, and the Eastern Jumna canals. The East Indian, the Sind, Panjab and Dehli, and the Oudh and Rohilkhand Railways also pass through the Doab in several directions, and afford an outlet for its surplus agricultural produce. This Doab was overrun by Shahab-ud-Din Ghori in A.D. 1194, and it continued in the power of the Dehli emperors until overrun by the Mahrattas in 1736, and occupied by the British in 1754–5, after the battle of Buxar and Kora, and in 1801 the whole lower Doab was ceded to the British by the Nawab Wazir.

Doaba, a moist rich tract of land between the Swat and Kābul rivers.—*Tod's Rajasthan; History of the Panjab; Tr. of Hind.*

DO-BE. HIND. A Brahman who has studied, or who teaches, two of the four Vedas, hence the term Do, two, and Veda. The caste of Brahmans so termed are generally ignorant and low persons, and by profession boxers and wrestlers.—*Wilson.*

DO-BHASHA. HIND. Two languages. Do-bash or Do-bhashi, one who speaks two languages; a broker or interpreter.—*Wilson.*

DOBSOON-NOOR, or the Salt Lake, is celebrated over all the west of Mongolia. It furnishes salt, not only to the neighbouring Tartars, but to several provinces of the Chinese empire. The Dobsoon-Noor is less a lake than a vast reservoir of mineral salt, mixed with nitrous efflorescence. The latter is of a faint white, and friable between the fingers; and is easily distinguishable from the salt, which is of a greyish tint, and with a shining and crystalline fracture. The lake is nearly ten miles in circumference, and here and there are yourts inhabited by the Mongols, who are occupied with the salt trade; they have also Chinese partners, for Chinese take part in every kind of trade or industry. The manipulation to which the salt is subjected requires little labour or science. It consists of nothing more than picking up the pieces, laying them in heaps, and covering them with potter's clay, and the salt sufficiently purifies itself.—*Huc's Journey.*

DOCKET. This term, in trade, is often applied to a short certificate, summary, or memorandum. In Government correspondence it means the summary or précis on the back of a letter. In English law it signifies a brief in writing.

DOCKS. Along the greater part of the eastern coast of the Peninsula of India, wherever the rivers can be entered by coasting craft, docks are formed by digging a channel from the river sufficiently large to allow the vessel to be floated into it at high water. A dam is thrown across the channel, and the earth being thrown into the dock thus formed, the vessel is floated up above the water mark. By draining off the water, the vessel is left high and dry embedded in earth. This is removed to allow of access to the bottom of the vessel, which is propped up by stones. It is usual also to place logs under the keel. A dry dock is thus formed about the vessel at a small expense. The repairs having been executed, it becomes necessary to lower the vessel down to that point when, the dam being removed and the water let in, she can be floated out. For this purpose cables are coiled under her, and these coils filled in with earth, the earth under the vessel and logs which were placed under her keel removed, the dock is dug out to its former depth, the vessel is left suspended resting on the coils; by uncoiling the cables gradually the vessel is let down, and is then floated out. Ships of 400 tons are thus docked at Coringa. This mode of docking ships is followed on the Indus. There are great dry docks in Calcutta and in Bombay for shipping repairs, and in Bombay extensive wet docks for receiving ships.—*Rohde.*

DOCTOR FISH, a name given to a species of Chætodon, also to the small-spined Acanthurus subarmatus, Bennetii.

DOCUMENT-BILL, an Indian bill of exchange drawn on London, having as collateral security the bill of lading and policy of insurance on the goods; against a part of the estimated value of these the bill is drawn.—*Simmonds' Dictionary.*

DODABETTA, the highest peak on the Neilgherry mountains in Southern India, in lat. 11° 25′ N., long. 76° 40′ E., its height being 8760 feet. It was made the site of an observatory, under the astronomer at Madras. A record of the meteorological observations was published at

Madras in 1848; the Toda name is Petmartz, the name means big mountain.—*Sykes; Schlagent.*

DODAH. HIND. The unopened cotton pod; any round seed-vessel, as poppy head.

DODAK. HIND. Also Dudal, milky, from Dudh, milk. Hence Eclypta erecta, Sonchus oleraceus, Convolvulus pluricaulis, Andrachne telephioides. Bāra dodak, Euphorbia thymifolia. Kulfa dodak, E. helioscopia.

DODA MARRI. See Baluchistan; Kahan; Kalat.

DODDERS, species of Cuscuta; in the Soane valley they cover even tall trees with a golden web.—*Hooker, Him. Jour.* p. 38.

DODITAK, a forehead jewel ornament, worn by Hazara women.

DODO, an extinct bird of the Mauritius. This and the Aphanapteryx of the Mauritius, the Dinornis, Philip Island parrot of New Zealand and Philip Island, and the Erythromachus of Rodriguez, have become extinct. Their large size made them conspicuous objects, and, being occupants of very limited areas, they were easily destroyed.—*G. Bennett, Gatherings*, p. 243.

DODOH. In Java, a posture of humility which inferiors assume when approaching superiors. It is similar to the custom in Burma, where the superior sits on his legs.

DODONEA BURMANNIANA. *D. C.*

D. angustifolia, *Roxb.*

Mendru, ...	BEAS.	Ghuraske, .	TR.-INDUS.
Sanatta, Aliar, .	HIND.	Veravena, .	,,
Ban men du, . .	RAVI.	Shumshad, .	,,

A handsome small evergreen shrub, well suited for hedges, for which it is often used, and generally called bog myrtle.—*Roxb.; Stewart.*

DODONEA VISCOSA. *Linn.* Common on the Neilgherries and Panjab; wood elastic, and useful for tool handles.—*M'Ivor; Von Mueller.*

DODUGA. TEL.? A wood of the Northern Circars.

DOFLA, a tribe occupying the hills forming the northern boundary of Assam. In one of their districts, that of the Char Dwar, or Four Marches, no less than 180 petty chiefs are said to hold authority in the Dofla villages. The tribes on the northern Assam frontier are found in the following order along the hills, viz. Aka, Abor, Dofla, Miri, and Mishmi; next to them is the Buteah. The Dofla country extends from the hill course of the Sundri river to the Bhoroli river, comprising the hills to the north of Chedwar in the Lakhimpur, and of Naodwar in the Tezpur district.

Bangni, the term in their language to signify a man, is the only designation they give themselves. During the latter days of the declining Ahom suzerainty, several attempts were made to check the Dofla atrocities; and on one occasion, raja Gourinath Singh is said to have marched an army into their hills for the express purpose of chastising them, and several thousand Doflas were taken prisoners and brought down to the plains. The raja obliged them to dig a canal, with the view of draining off the large and unwholesome morasses that still exist in mahal Kollongpur; but the greater portion of them are said to have perished, and the task assigned to them remained unaccomplished. They are in communication with the Tibetans, and possess many articles of Tibetan or Chinese manufacture. They have a Mongolian type of physiognomy; but from their intercourse with the people of the plains, and the number of Assamese slaves which they have acquired, it is much modified and softened, and Colonel Dalton had sometimes seen Dofla girls with pleasing and regular features. Their complexion varies much from olive with a ruddy tinge, to dark brown. Marriages and marital rights are the same with the Dofla as with the hill Miri. Those who can afford it are polygamists; but polyandry is far more common amongst the Dofla than amongst the eastern tribes.—*Dalton, Ethnol. of Bengal; Beng. As. Soc. Jour.*, No. 2051.

DOG.

Kalb, ...	ARAB.	Canis, ...	LAT.
Kan, ...	CHIN.	Sag, ...	PERS.
Chien, ...	FR.	Svan; Spa, . .	SANSK.
Hund, ...	GER.	Perro, ...	SP.
Kuon, Kŏon, . .	GR.	Nai, ...	TAM.
Kutta, ...	HIND.	Kuka, ...	TEL.
Cane, ...	IT.	Kyupek, ...	TURK.

The various kinds of dogs are commonly believed to have been derived from one extinct species. On the monuments of Egypt, of date B.C. 3400 to 2100, several varieties of dogs are represented, and on one Assyrian monument, of date B.C. 640, an enormous mastiff is figured,—evidences of the fact of the long existence of many varieties. A predilection for the society of man seems almost inherent in the dog; and when we trace back its history, as far as the refuse heaps of Denmark and the pile folks of the Swiss lakes, or, what is still more suggestive, the representations on the Egyptian temples and tombs, the great fact is irresistible, that man and the dog have shared each other's company for possibly a longer period than any other creatures; and whether the attachment at first was gradual or not, it has now, at least as far as the brute is concerned, become instinctive. Moreover, when we think of the vast periods embraced by the Egyptian monuments of antiquity, and the time it must have taken to develope even one variety from the feral stock, and note the foxhound or the turnspit of 4500 to 5000 years ago, it may well be conceded that the dog, of all four-footed beasts, has a claim to man's kindness and protection. The dog is mentioned forty times in the Hebrew Scriptures, but always in terms of aversion. In the present day, Bedouins cherish their dogs. Except at Medina, they are met with everywhere in Arabia and Syria, are of the fierce Turkoman breed, the shepherd dog, the bazar dog, and the Macedonian greyhound, and are almost as much cherished as by Europeans; and, whether a wretched mongrel, or belonging to one of the pure breeds, a dog is the fierce companion of the wandering Turkoman, with its long ears and winter coating of long soft hair. The shepherd dog is not inferior to that of Europe in any respect. There is also the town or bazar dog, besides crosses of the dog and wolf and the dog and fox. Dogs are generally the only sentinels of every Bedouin encampment; and the Macedonian greyhound, with the usual addition of a hawk perched near the entrance of the tent, forms part of the suite of a shaikh or other chief throughout most parts of Arabia. This animal is about the height of a full-sized English greyhound, but rather stouter; he is deep-chested, has long smooth hair of a red colour, and a tail nearly as much feathered as that of an Irish setter. His speed does not quite equal that of the highest bred dogs of Great Britain,

but he keeps it up so much longer, that he is tolerably certain of running down the fleetest gazelle.

The wild dog is the Cuon rutilans of naturalists. They are to be found in packs throughout Ceylon, British India, and Malayana, the Himalaya and Tibet, and each of the races has a name for it, mostly meaning wild dog. Wild dogs do not bark,—they only whine, howl, and growl. The Himalayan wild dog, when taken young, is easily tamed; and this rule would seem to hold good with the wild races of other countries; indeed, although not generally acknowledged, the wolf, jackal, and hyæna get much attached to man, if carefully reared and treated with kindness. The semi-domesticated dogs, in common with the wild species, have erect ears, and this would seem to become more pronounced the nearer they assimilate to the latter. This circumstance has been noted in respect to domesticated sheep, goats, etc., when left more or less to shift for themselves, as is apparent on the Himalayas and Alps.

In the Nepal hills, the dhole or wild dog are found in packs, varying from 50 to 200, and the havoc committed by them among the flocks of sheep and hill cattle is incredible. Their destruction of deer also is immense, and their mode of hunting may be worthy of mention. In size the wild dog is little larger than the common jackal of India, but longer in the body, and possessing much greater power, with a very formidable set of jaws. Colour, a rich reddish-brown, with scenting qualities of the highest order. Soon after nightfall the pack assemble at a given cry, when they disperse in threes and fours in search of game. The first party that hit off the trail, open, when the whole pack rush to them, and when all are assembled, fasten to the trail and off they go. The deer soon become alarmed and double, when the pack immediately tell off in parties, each one rushing to the different passes for which deer are known to make; and on the deer attempting to pass either, it is immediately seized by the party, who utter a simultaneous cry, and the whole pack then rush in, and the deer is at once devoured. Fresh game is next sought, and in the same way destroyed; and this species of hunting is continued according to the size of the pack, till all their appetites are appeased, when they retire to their almost inaccessible fastnesses in the rocks, and remain for three or four days, until hunger again drives them forth on another excursion. From their destructive qualities, the wild dogs hardly ever remain longer than a month in the same locality, having in that time effectually scared away all the deer for miles round. Captain Smith never knew them to attack man, and even when severely wounded, they will only snap after the manner of a wounded jackal. When deer are not procurable, they will attack even bears. Wild dogs differ slightly in appearance. They are 'the most determined enemies of the tiger, hunting him whenever they meet with him.' 'I have been assured,' remarks Lieutenant Rice, 'by Bhils, that they have sometimes seen a tiger kept prisoner up a large tree, with a pack of these dogs hanging around him, when on no other occasion would a tiger attempt to save himself by climbing trees. On the approach of the men the wild dogs dispersed, when the tiger jumped down and gladly made his escape. This I firmly believe to be a fact, for the story arose out of a casual remark which one Bhil made to another in my hearing, as we were passing a certain large tree (with a straight stump about five yards high before the branches began, up which a tiger had jumped). Perhaps these dogs hunt the tiger for poaching on their deer; or it may be only the old antipathy between cat and dog on a large scale.'

Mr. Arthur Grote, C.S., sent to the Bengal Asiatic Society from Chaibasa, Central India, the skins and skeletons of a mature female and male half-grown, of the ordinary wild dog, so called, of British India. These animals are specifically identical with a particularly fine living adult male sent down from Upper Assam; and this appears to be the ordinary species alike of the Himalaya and of Central and S. India, Canis Dukhunensis, *Sykes*, and C. primævus, *Hodgson*; and a Malayan specimen in that museum, which was supposed to be C. Sumatrensis, *Hardwicke*, differed only in the considerably deeper tint of its rufous colouring.

The *Vakhan Dog* is a breed from Chitral. It bears a strong resemblance to the Scotch collie. They have long ears, a bushy tail, and a body more calculated for swiftness than strength. The colours are black, reddish-brown, or mottled.

The *Hill Dogs* are covered with black wool, which forms an article of traffic. They are large, and ferocious to strangers, but are useful as sheep-dogs, and are provided with an iron collar to secure the dog from a leopard's teeth.

The *Tibetan Mastiff* is large, strong, with a shaggy coat. It is very fierce, well adapted to defend flocks against robbers or beasts of prey; it is subject to hydrophobia. It has a tan-coloured supra-orbital stripe.

The *Shikari Dog* of Kamaon is very like the pariah dog of the plains.

The *Dogs of Kanawar* are of a large ferocious breed, resembling wild beasts in their nature; they are covered with black wool, and are very averse to strangers, whom they often bite and tear in a most shocking manner; they are generally chained during the day, otherwise it would be dangerous to approach a village. The fleece, especially of the young ones, is almost equal to shawl wool.

The breed of Bisehur, in the Himalaya, is noted for its size and hardihood. The finest dogs of this breed bear a considerable resemblance to a mastiff, but retain a good deal of the cur. Their colour in general is black and white, with a little red occasionally; their hair is long and thick, and the tail long and bushy, curling up behind; their head is somewhat long and pointed, like the common shepherd's dog. They are often very fierce, and sometimes attain a considerable size, but are seldom so large as a full-sized mastiff. These animals are furnished with a down under their long shaggy hair, which is as fine and soft as shawl wool; this comes off easily in warm weather, and is regularly shed with the hair. Every animal is similarly furnished in this cold country. The natives use these as sheep-dogs, in the same way as those of other countries, and also for hunting all sorts of game, even birds, which they tire out in flying; and some were valued at a very high price.

From a genealogical table in the Encyclopædia Britannica, it appears that the common Turkish dog is the parent stock of most others known in Europe.

The *Greyhound of Bamian* is fleet. It has long shaggy hair on the legs and body. The Persian greyhound has a fringe of soft silky hair on the ears.

The dog which is known in Bengal by the name of the *Nepal Dog*, is, properly speaking, a native of the Upper and Lower Tibets, whence it is usually brought to Nepal. It is a fierce and surly creature, about the size of an English Newfoundland, and covered with thick long hair. It is reckoned to be a good watch-dog, and never to sleep at night.

Amongst the Hindus of India and the Indian Mahomedans, the dog is regarded as an unclean animal. With the Cree, Ojibbeway, Swampy, and Sioux, the dog was supposed to be the most acceptable sacrifice to the offended deities, five dogs being the common number for a propitiatory offering. The unclaimed dogs of Bombay, Egypt, Mecca, and Constantinople are a sad nuisance, and even in Bombay, being protected and fed, but not housed, by the Parsee inhabitants, as well as by Hindus. An expiring Parsee requires the presence of a dog, in furtherance of his departing soul, and, after the Sag-did or dog-look, the exposed body is speedily consigned to the Tower of Silence. In Rangoon, pariah dogs infest the town. The greatest number of dogs are found near the Kyoungs.

Dogs are eaten in China, at Zanzibar, in Australia, and the Pacific. In China there are restaurants both for dogs' and cats' flesh.

Dog-skin is thin, but tough, and makes good leather. Of late years horse leather takes its place for thin dress shoes. Most of the dog-skin gloves are really made of lamb-skin.

Dogs in the Pacific Islands are fed on cocoanuts.—*MacGregor; Darwin's Variation of Animals and Plants; Jerdon's Mammalia; Smith's Nepal; Jour. As. Soc. of Ben.*, November 1856; *Gerard's Kanawar; Fraser's Himalaya Mts.* p. 354; *Robinson's Travels*, ii. p. 356; *Gray*, ii. pp. 75, 76. See Canis.

DOGAR, also Dogra, a predatory and pastoral race scattered over various tracts of the N.W. of Hindustan. There are a few in Hansi, Sonam, and Firozpur, which latter place, together with a considerable tract along the bank of the Sutlej, they held for a long time during the 18th century in almost undisputed sovereignty. Their occupation was divided between pasture and plunder. They are Mahomedans, and state that they were originally Chauhan Rajputs; but the Kaim Khani and other converted Chauhan of those parts will not acknowledge the fraternity, asserting that Dogar were nothing but Jats and Gujars. Dogars are held in no consideration by their neighbours, but in former times they were much dreaded on account of their predatory habits, which a civilised neighbourhood and a strong government compel them now unwillingly to relinquish. Their personal appearance is in their favour: they are a tall and muscular race, and are generally remarkable for having large aquiline noses. Members of the Dogar race attained distinction first as feudatories of Ranjit Singh, and later as allies of the British. The raja of Jamu and Kashmir is a Dogar. They use as a written character a modification of the Nagari, to which the term Dogri has been given.—*Elliot's Supp Gloss.; Cust.*

DOGBANES, the Apocynaceæ, or dogbane tribe of plants, are trees and shrubs, of which the oleander is a conspicuous example. Some are herbaceous, as in the case of the vinca or periwinkle, a climbing plant with trailing twigs. The Nerium piscidium of Roxburgh is common in the Khassya or Sylhet mountains, and there called echalat. It is an extensive perennial climber. Its bark contains a large quantity of fibre, which the natives use for the same purposes as hemp. Dr. Roxburgh, in steeping some of the young shoots in a fish-pond, in order to facilitate the removal of the bark, and to clean the fibres, found that many, if not all the fish, were killed. Hence the specific name which he applied. Dr Wight formed the plant into a new genus, Echaltum.—*Fl. Ind.* ii. p. 7.

DOG-FLY, the zimb of Abyssinia.

DOG'S TONGUE FISH is shaped like the sole. It attaches itself to the bottoms of boats, and makes a sonorous noise, which is more musical when several are stuck to the same plank and act in concert.—*Bowring's Siam*, i. p. 11.

DOH, a name in Java for the horsehair-like fibre of the eju or gomuti palm, the Arenga saccharifera, *Labill.*—*Simmonds.*

DOHADA. Hind. A term which usually signifies the desire or longing of a pregnant woman, to which the Hindus attach as much importance as do the nations of Europe.

DOHAGUN. Amongst the Hindus, Sohagun is a woman who becomes sati previous to her lord's death; Dohagun, one who follows him after death.

DO-HARTHA. Hind. A well with two wheels.

DOING NAK, a hill race in Arakan, on the upper waters of the Mayu river. They are Buddhists; their language is a corrupt Bengali, and they call themselves Kheim banago. They are a branch of the Chukma, and appear also to have been endogamous. Captain Lewin mentions that they abandoned the parent stem during the chiefship of Janbakhsh Khan, about 1782. The reason of this split was a disagreement on the subject of marriages. The chief passed an order that the Doing Nak should intermarry with the tribe in general. This was contrary to ancient custom, and caused discontent, and eventually a break in the tribe.—*Lewin's Hill Tracts of Chittagong*, p. 65; *Raffles' History of Java*, i. p. 328; *Lubbock, Orig. of Civil.* p. 103.

DOI-PHORYA. Mahr. The name of a class of importunate Hindu mendicants, who knock their heads against stones to enforce compliance with their demands; hence any importunate petitioner.

DOJA. Tibet. An ingot of silver, stamped, current on the hills for 20 rupees.

DOKA. Hind.? A tree of Chutia Nagpur, with a hard red timber.—*Cal. Cat. Ex.*

DOKAD-DAR, a pattern in a Kashmir shawl. Dokh, a Central Asian cotton fabric.

DOKH. Hind. A cut-and-thrust sword of Hindustan.

DOKHMA or Dakhma, or Tower of Silence, the place for depositing the dead of the Parsee race. The dokhma has a deep well, surrounded by a platform with channels converging to the well. The body is laid on a partition of the platform, and the fluids resulting from its decomposition flow along the channels into the well; but after a time the remnants of bones are also swept into that excavation. The word is also said to be

the name applied to the fire temples of the ancient fire-worshippers overhanging the Caspian Sea.

DOKHTAR. PERS. A daughter. It is pronounced much the same as that word is in Scotland. It is from the Sanskrit Duhitri, one who milks the cow, a milkmaid.

DOKOA, a pigmy African race described by Dr. Krapf, 4 feet high. They are said to pray with feet in the air and their head on the ground, and eat snakes, ants, mice.

DOK-PA-CHU, the river of the Dokpa. Lieut. Strachey found the Dokpa the chief salt-carriers.

DOKRA, a low caste of Singhbum.

DOL, in Bengal a social section of high-caste Hindus, each presided over by a Dolapati, who can summon the section together on marriage and death festivals.

DOL, in Persian, also Dol-dolab and Dolaba, a revolving wheel of buckets for drawing water, usually called a Persian wheel, and such as is used in dredging machines. In Urdu, Dol is written either with the Persian or Hindi D; and is also a vessel for drawing water; a leathern bucket.—*Elliot.*

DOLA, in Yemen, is a government officer much such another as a pacha in Turkey, only acting upon a narrower stage.—*Niebuhr's Tr.* ii. p. 85.

DOLA. HIND. From Doola, to swing; a swing. Dola-Jatra, the swing festival held on the full moon of Phalgun (March—April) in honour of Krishna, when figures of Krishna and Radha are swung in an ornamented swing.

DOLA. HIND. A Mahomedan woman of inferior rank, married to a man of superior rank. She takes a lower place than a wife of equal station, and is carried to her husband's home without any ceremonial or procession.

DOLA. HIND. Bier. Dola runka, the war bier.

DOLDRUMS, a term given by seamen to the zone or girdle of the equatorial calms, lying between the N.E. and S.W. trade winds. Here long calms alternate with dreadful storms. Besides being a region of calms and baffling winds, it is a region noted for its rains and clouds, which make it one of the most oppressive and disagreeable places at sea. The ships from Europe for India and Australia have to cross it. They are often baffled in it for two or three weeks; then the children and the passengers who are of delicate health suffer most. It is a frightful graveyard on the wayside to those Eastern lands.—*Maury's Phys. Geog.* p. 175.

DOLI. HIND. Grounds and houses established by Hindu religious bodies in towns.

DOLICHOS, a genus of plants belonging to the natural order Fabaceæ, or the bean tribe. About thirty-two species of Dolichos are well known. Cattle eat the straw of D. pilosus, the Takuri-kulay of Bengal. D. pilosus, with downy leaves and pods, abounds in Tenasserim. Several varieties of D. Sinensis are cultivated, and D. uniflorus, the common horse gram plant, is grown in many parts of India.

DOLICHOS CATJANG. *Roxb.*

D. Sinensis, *var.* orthocarpus.

Barbuti, ... BENG.	Bullar, ... HIND.
Tadagunny, . . . CAN.	Masendi, . . . MALEAL.
Kurson pyroo, . . ,,	Lasunda, . . . SANSK.
Red gram, . . . ENG.	Lee mæ, ... SINGH.
Small-fruited dolichos, ,,	Karamani, . . . TAM.
Chora, ... GUJ.	Danta pesalu, . . . TEL.
Lobeh, ... HIND.	Bobra bobarlu, . . ,,

A valuable pulse, prized in India; it is cultivated in Portugal. D. Sinensis has six varieties, distinguished by their white, brown, and black seeds,—leucospermus, phæospermus, and melanospermus. *Ainslie*, p. 237; *Roxb.* iii. 303. See D. Sinensis.

DOLICHOS FALCATUS. *Klein.*

Ita munge tige, . . TEL.	Verri ulva, ... TEL.

Common in hedges, thickets, etc., where the soil is rich and moist. Flowers during the cold season. The tuberous roots are cut by the natives into the form of beads, and strung and worn round the neck to cure purging in children.—*Roxb.* iii. 311.

DOLICHOS GLUTINOSUS. *Roxb.*

Glycine viscosa, *Roth.*	Rhynchosia viscosa, *D.C.*
Shim-batrajee, . . BENG.	Karu kandi, . . . TEL.
Erra chikkudu, . TEL.	Nugu chikkadu, . . ,,
Karu chikkadu, . ,,	

Grows all over India, and has largish yellow flowers; differs but little from D. tomentosa.

DOLICHOS PILOSUS. *Roxb.*

Tau bai, ... BURM.	Takuri kulay, . . HIND.

Grows over all India. Cattle eat the straw.—*Roxb.* iii. 312.

DOLICHOS SINENSIS. *Linn.*

α eccremocarpus.
αα leucospermus.
ββ phæospermus.
β orthocarpus
ββ phæospermus.
γγ melanospermus.

Burbuti, ... BENG.	Chota harwanh, . PANJ.
Chowlee, ... DUKH.	Rawangan, . . . SIMLA.
Ollœah, ... EGYPT.	Chaunro, ... SIND.
Lobia, . . HIND., PERS.	Wanduru mæ, . . SINGH.
Rawan, . . JALANDHAR.	Karamani; Bobbarlu, TAM.
Raongi, . . . KANGRA.	Ala-chandala; Alsanda, ,,
Paru, ... MALEAL.	

The varieties of this commonly-cultivated species have white, brown, and black seeds. The section eccremocarpus is D. Sinensis, *D.C.*, the D. sesquipedalis of Linn. The orthocarpus is the D. Tranquebariensis of Jacquemont, D. catjang of Roxburgh. This bean is sown at the commencement of the rains; it has a very long and slender pod, and eaten as French beans. The bean itself is small, and those with white seeds are esteemed the best.

Moisture, ... 12·44	Fatty or oily matter, 1·41
Nitrogenous matter, 24·00	Mineral constituents
Starchy ,, 59·02	(ash), ... 3·13

DOLICHOS TRANQUEBARIENSIS. *Jacq.*

D. Sinensis, *var.* orthocarpus.

Lobeh ke phalli, . DUKH.	Pytun-kai, . . . TAM.
Rajamasha, . . SANSK.	Pesala-kaia, . . . TEL.

This is a long, slender, pleasant-tasted legume, not unlike the French bean both in appearance and natural qualities. There is a larger variety of it, called in Tamil, Perum pyttan-kai, in Dukhani, Suffaid lobeh ke phalli; in Telugu, Dantoo pesala-kaia, and in Sanskrit, Sveta rajamasha.—*Ainslie*, p. 244.

DOLICHOS UNIFLORUS. *Lam.*

D. biflorus, *Roxb.*

Roiong; Rawan, . BEAS.	Barat; Botang, . PANJ.
Kultho kulle; Kulti, BEN.	Guar, ... ,,
Hurali, ... CAN.	Kolutha; Culutu, SANSK.
Kalatt; Kulat, . CHEN.	Kult; Kolt, RAVI, SUTLEJ.
Madras gram; Grain, ENG.	Gagli, ... ,,
Horse gram, . . ,,	Kollu, ... TAM.
Kulti, . HIND., MAHR.	Ulavallu; Ulava, . TEL.
Muthera: Masdiri, MAL.	

It is used in S. India for cattle and is the common food for horses in the southern part of the Peninsula. It is a very pleasant-tasted pulse, and is used by the poorer classes as an article of diet in curries. It is grown in fields after the

rains. When given to horses, it must first be boiled; they soon become very fond of it, and keep in as good condition as upon any other grain.

Moisture,	11·40	Fatty or oily matter,	0·81
Nitrogenous matter,	23·25	Mineral constituents	
Starchy ,,	61·43	(ash),	3·1

It is commonly cultivated for its pulse up to 7000 feet or more in the Himalaya, and is largely grown in the Peninsula of India. It produces about sixty-fold in a good soil and favourable season. One variety has grey seeds; the seeds of another variety, melanospermus, are jet black. Both varieties of seed are used to feed cattle, and as food of man in times of scarcity. Cattle eat the straw.

Its Oil,

Moneela gram oil, . ENG. | Varoosanigaloo nuna, TEL.
Varcadalai yennai, TAM. |

is a pale yellow clear oil. The variety employed for oil has nearly white seeds.—*Roxb.; Voigt, J. L. Stewart; Ainslie*, p. 238.

DOLL, properly Dal. HIND. A name of the pulses, Cajanus Indicus or pigeon pea, and Phaseolus aureus; largely used as food.

DOLLAR, a coin current in the United States of America, parts of South America, the Eastern Archipelago, China, and some of the states of continental Europe. It is usually the largest silver coin of a country. The American dollar is divided into 100 cents, and is valued at about 4s. 2d. There are Sicilian, Austrian, and Spanish dollars, which are estimated according to their weights and fineness.

In the Archipelago, the dollar coins of the highest value are what are called 'Pillar dollars,' from two pillars, supposed to represent the Pillars of Hercules, which are stamped on the reverse of the coins of Carolus III. and IV. The coinage of the independent states of South America, and even those of Ferdinand VII. of Spain, are only current at a considerable discount. Almost the entire exportable produce of Acheen and the Pedier coasts is raised by the Batta and other nations of the interior, who sell it to the Malays of the coast, who again resell it to strangers. The Batta, like many other of the brown-complexioned tribes of the Archipelago, have a singular custom of melting down the precious metals they obtain into circular plates, which are connected with their religions. The Pillar dollars, probably owing to the superior purity of the metal, are more easily melted down than the Mexican dollars with [illegible] quite a degree of [illegible] that the [illegible] are unable to produce. The Anglo-American traders who visit the west coast therefore hit upon the system of melting down the Mexican dollars in the United States, and coining them into Pillar dollars, so that an equalization in the value of these coins is likely soon to take place; but as the Batta require the dollars almost solely for the purpose of melting down, it may be doubted whether this new system may not materially affect the production of exportable articles.—*Simmonds' Dict.*

DOLMEN, a table stone used by ancient races as a sepulchral monument. The British apply the word cromlech to widely different structures. Its true meaning is a circle of upright stones, like the 'Hurlers' and 'Nine Maidens' in Cornwall. The cromlech of the British antiquarian is the same as the Welsh and English 'quoit,' such as Arthur's quoit or coetan, near Criccieth, Lanyon quoit and Chun quoit and others in Cornwall, Stanton Drew quoit in Somersetshire, the Kittakoty or quoit near Maidstone, and the Coity-y-enroc in Guernsey, all of them circles of upright stones. Professor Sven Nilsson (On the Stone Age, p. 159) defines the English cromlech as synonymous to the French dolmen, the Scandinavian dös, and the dyss of Denmark, consisting of one large block of stone, supported by some three to five stones arranged in a ring, and intended to contain one corpse only, several of these dorsar being sometimes enclosed in circles of raised stones. Following, however, the nomenclature given by the late Dr. Lukis, we cannot be far wrong in assigning the word cromlech to all elaborate megalithic structures of one or more chambers, in which category the passage graves may be included. The dolmen (Dol, a table, Moen, a stone) is, as its name implies, of different structure. The cromlechs of Jersey and the adjacent islands partake of the character of the French grottes aux fées, the fairy's grotto, as well as the Gangrifter, the gallery tombs of the Swedes, the jettestuer or chambered tumuli of the Danes, and the German Hunenbetten. In China, the chambered tumuli associated with megalithic avenues have attained their greatest development. The great tomb (the Ling or resting-place of Yung Lo of the Ming dynasty), 30 miles from Pekin, consists of an enormous mound or earth barrow covered with trees, and surrounded by a wall a mile in circumference. In the centre of the mound is a stone chamber containing the sarcophagus, in which is the corpse. This chamber or vault is approached by an arched tunnel, the entrance to which is bricked up. This entrance is approached by a paved causeway, passing through numerous arches, galleries, courts, and halls of sacrifice, and through a long avenue of colossal marble figures, sixteen pairs of wolves, kelins, lions, horses, camels, elephants, and twelve pairs of warriors, priests, and civil officers.

There was a fine celled dolmen formerly existing near Nidi-mund, on the Neilgherries, and throughout the Belgaum and Kaladgi collectorates are scattered groups of dolmens, formed of large rough slabs set on edge, with a huge cap-stone laid over them. Many of these are to be seen to the S.W. of Konur, in the Belgaum collectorate. A dolmen was discovered in Gujerat. Barrows occur in Zoraper. Upright monumental stones [illegible] also occur.—*Ind. Ant.*

DOLOMIEA MACROCEPHALA. *D.C.*

Dhup, Dhupa, .	PANJAB.	*The Root.*	
Gugal, . . .	SUTLEJ.	Pokhar-mul, .	PANJAB.

A plant not uncommon from the Sutlej up to the Indus, at from 10,500 to 13,000 feet, often growing on the crests of ridges. The odorous root is locally used as incense offered at shrines and to rajas, and the flowers also are placed in temples on the Sutlej.—*Dr. J. L. Stewart.*

DOLOMITE. Hwah-ju-shih, CHIN. The Chinese make vessels out of their dolomites. It is also used medicinally internally. Dolomite is a magnesian limestone, used for building and for lithographic stones.—*Smith.*

DOLPHIN. This name is applied by southern-going sailors both to the brilliant Coryphæna hippuris, *Linn*, the Dorado or Dolphin proper, of a brilliant blue or purple, and to the Delphinus or

Porpess. The Coryphæna hippuris are caught in the Gulf of Arabia (Bennett,' i. p. 8). When swimming about it is of a brilliant blue or purple, gleaming with a metallic lustre on every change of reflected light, and varying in intensity according to the degree of illumination and shade. On being captured, the changes of its tints are most lovely: the bright purple and golden yellow hues change to a brilliant silvery tint, varying back again into the original colours of purple and gold. This play of colours continues for some time, and then settles to a dull leaden hue. The Delphinus Peronii is very rare, and confined to the confines of the Antarctic Ocean, S. of Cape Horn.—*G. Bennett*, i. pp. 8, 20.

DO-LUNGI of Jalandhar, a fine double lungi or scarf.

DOM or Hali. In the great belt of forest land intervening between the mountains and the plains, are several tribes. One of these, the Dom of the N.W. Provinces, is generally regarded as a remnant of the original stock which the intruding Aryans displaced. The huts of the Dom or Hali are on a low range, and the Dom are hereditary bondsmen to the Rajputs. They are supposed to be the same as the Dom of the Santal hills, and the Dumi, still a well-defined tribe in sub-Himalayan Nepal. Besides the Dom of Garhwal, in the N.W. Provinces, there are wandering and wild tribes, named Bhur, Damak, Kanjar, Kumboh, Nat, Saussi, Gond, the Tharu in the Terai, and the Pasi in Oudh. In Oudh the Dom is a sweeper, carries away the dead, is often a musician, and his wife the Domini, an actress who performs in the private apartments of women. In Kamaon in N.W. India, the Dom is engaged in basket-making and wicker-work. They have dark, almost black skins, and crisp curly hair. The Dom is now dwelling amongst the general population in the north of India, under the Himalaya, and in the Kamaon hills. The Dom were once a considerable tribe, and are still a numerous helot section of the population, being in fact the only inferior class, and ordinary labourer as well as artisans, and, with the Ghasi, in the labour market of Northern India take the place of the Mang, Mhar, Dher, and Pariah of the south of India, and are rope, fan, basket, and mat makers. Tradition fixes the country of the Dom to the north of the Gogra, touching the Bhur on the east, in the vicinity of the Rohini. Several old forts testify to their former importance, and still retain the names of their founders, as for instance Domdiah and Domungurh. Ramgurh and Suhunkote on the Rohini are also Dom forts. Buchanan considers that the Dom are the same as the Dom Kutur (Domtikar); also that the Dom expelled the Tharu, and were afterwards expelled by the Bhur. There are several Dom or Domra tribes scattered over the western districts of Oudh, and in Bundelkhand and Saugor. The Mirasi Dom are Mahomedans descended from Bhat, and are perhaps more generally known by the name of Mirasi and Puk'hawuj. The name of Mirasi is abbreviated into Mir; and thus the Mir of the Kala Nuddi, after whom Mirapur is called, having assumed this distinguished title, are frequently able to conceal the truth of their being really descended from the Mirasi Soorkh. Domang, a low-caste race in Kanawar, the same as the Dom of Kamaon.—*Wilson; Latham; Campbell*, pp. 16–125; *Buchanan, Eastern India; Elliot; Dalton, Eth.*

DO-MALA. HIND. A large well, furnished with a double 'harth' or Persian wheel.

DO-MAT. HIND. Soil, part clay and part sand, hence the name 'two-earths,' Do-mat.

DOMBA, Dombar, or Domar, an athlete, rope-dancer, or gymnast, known in the south of India as the Kollati or Khelati. The young women are models of physical strength; they are not restrained from intercourse for money. They are in small clans in the centre and south of the Peninsula of India.

DOMBA GASS. SINGH. Calophyllum inophyllum, *L.* Domba-keena is C. Moonii, *W.* Domba oil, a fragrant fixed oil obtained from the seeds of the Alexandrian laurel, C. inophyllum. It is used for burning and for medicinal purposes. C. inophyllum has a soft, coarse, open-grained, light wood, bearing a strong resemblance to inferior Honduras mahogany, takes a good polish, and presents a pretty curled pattern; perhaps not a very durable wood, at all events in its native country.—*Ex.* 1851.

DOMBEYA, a genus of plants belonging to the natural order Sterculiaceæ, inhabiting the East Indies, and the Isles of France, Bourbon, and Madagascar. The bark of D. spectabilis is made into ropes in Madagascar. D. angulata, *Cav.*, is the D. tiliæfolia, *Roxb.* It is a shrub, native of Bourbon, with rose-coloured flowers like those of the common oleander, leaves cordate; flowers in corymbs, of a pretty rose colour. D. palmata, *Cav.*, a shrub; leaves palmate, resembling the common castor-oil plant. Flowers, in large terminal corymbs, rose-coloured, appear in September and October. D. tomentosa is a small tree with rose-coloured flowers.—*Eng. Cyc.; Riddell; Roxb.*

DOME, in architecture, is generally in use for tombs of the Indian Mahomedans. The ceilings and domes of Hindu and Jain temples are sometimes of singular excellence of execution. In the western side of India, the cusped arch and the dome characterize the Mahomedan style of architecture, but that of Ahmadabad and that of the Bijapur buildings present points of difference. Perforated stonework occurs in old Hindu buildings, but specimens remarkable for the variety of beautiful design are chiefly to be found in the Mahomedan works of the 15th and following centuries at Ahmadabad and Aurangabad.

DOMETT, a thin kind of flannel, of which the weft is of wool, the warp of cotton.—*Faulkner.*

DON, D., a botanist, author of the Prodromus and Flora Nepalensis.

DON. HIND. A clod-crusher drawn by two bullocks; the driver stands on the implement when working it. The kulu is used after the clod-crusher for levelling the ground, and, with the scarifier removed, it is used for covering the seed after it is drilled in. The kuri is a drill used in rice cultivation.

DONA. HIND. A leaf folded up as a cup.

DONABEW, a town in Pegu, taken by the British 2d April 1825.

DONDRA HEAD, the most southern point in Ceylon, is in lat. 5° 55′ N., long. 80° 33′ 40″ E. It is low and projecting, and covered with cocoa-nut trees. Extensive ruins are still on it of an ancient and once celebrated temple, which was sacked and destroyed by the Portuguese in 1587.

DONDU. HIND. Tubes of the corolla of the Nyctanthes arbor-tristis.

DONG. BHOT. The wild yak of Tibet, the fiercest of all known ruminants. It will rarely allow a man to escape alive if it can come up with him. It is generally hunted on horseback, the great aim being to detach one from the herd. It affects open grassy places, and goes in large herds. Its favourite pasturages being ascertained, in the midst of these the hunters, who are on foot, throw up circular enclosures of stone a few yards apart, the hunter taking up a position in one of them. When a dong is within shot, the hunter, having fired at him, instantly quits his enclosure for another; for as soon as the animal hears the shot, whether he has been hit or not, he, guided by the smoke of the discharge, rushes furiously on the enclosure, and commences knocking it to pieces. When the hunter gets another shot at him, he retires again from his shelter to a fresh enclosure, and so on till he has killed his game. The ordinary size of the dong is four times that of the domestic yak; it is black all over, having occasionally a white streak in the forehead. The horns of a full-grown bull are said to be three feet long, and the circumference must be immense. The common mode of describing it is to throw out the elbow, bring the fingers to the ribs, and point to the circle thus formed as the size of the base. It is used by the grandees of Tibet at marriages and other feasts, when it is filled with strong drink, and handed round to the company. Nothing more commendatory of the host's joviality can be said, than that he regaled his guest out of the dong's horn. The horns so used are finely polished, and mounted with silver or gold and precious stones. It is common in a Tibetan goompa (Lamaserai) to see a stuffed dong standing in front of the image of Maha Kali, at whose shrine the animal is thus figuratively sacrificed; axes and other instruments of sacrifice are ranged around the image. Strange that Buddhists should preserve this feature of Hinduism in their places of worship; not more so, however, than, as Huc describes, that a lama should nearly go into fits on seeing a louse from his tunic impaled for the microscope, while the whole of his countrymen and co-religionists are among the greatest slaughterers and consumers of animal food in the world.

DONGAR. MAHR. A hill, high ground. Dongar-Koli. MAHR. A lawless tribe inhabiting the hilly country. Dongargaon, on the plateau of Ch'hatisgarh, has a great grain market.

DONGI - DONGI of Maccassar, Eucheuma spinosa; Plocaria candida, *Nees;* the agar-agar of commerce.

DONI of the Coromandel coast is a huge vessel of the ark-like form, about seventy feet long, twenty feet broad, and twelve feet deep, with a flat bottom or keel part, which at the broadest place is seven feet; and at the fore and after parts of the vessel it breaks into ten inches, which is the siding of the stem and stern post. The fore and after bodies are similar in form amidships. Their light draught of water is about four feet, and when loaded, about nine feet. These rude unshapely vessels trade from Madras and the coast to the island of Ceylon; and many of them to the Gulf of Manaar, as the water is shoal between Ceylon and the southern part of the continent. They have only one mast, with a long sail, and are navigated from land to land, and coastwise, in the fine season only.

DONJONG-MA, a goddess of the Garo.

DONKEY, the ass, the Gad'ha of the Urdu-speaking races of India. Gadhe-ka-hal, HIND., literally a donkey's plough. Before the British domination in India, it was not uncommon to yoke donkeys in a plough and drive them over the ruins of a captured fort, as a mode of showing supreme contempt for the vanquished enemy. The furrows thus raised were levelled by the lohe-ki-mye, or iron harrow. Horace says (Carm. i. 16):

'Exitio gravi
Stravere, et altis urbibus ultimæ
Stetere causæ, cur perirent
Funditus, imprimeretque muris
Hostile aratrum exercitus insolens;'

indicating this mode of wreaking vengeance. It has been in especial favour with Eastern nations, and was practised by Chengiz Khan and Timur with unrelenting severity. Hence the common expression, 'I shall sow barley where you now stand,' as in the vaunt of the bandit minstrel Kurroglow, at p. 138 of Popular Poetry of Persia. Gadhe-par-charhana, literally to seat upon a jackass, is a punishment more commonly known by the Arabic word Tash'hir, publication, celebration, which is rendered by Golius, 'Per urbem duci jussit sontem in exemplum; fere asino aut camelo impositum.' In India delinquents are never placed on camels, but often paraded on donkeys.—*Elliot's Supp. Gloss.*

DONKIA, a pass in N. Sikkim, in lat. 27° 56′ N., and long. 88° 48′ E. The crest is 18,466 feet above the sea. Tibet is visible from its summit. Dr. (Sir) J. D. Hooker described the grand but most desolate panorama beheld by him from the summit of this pass.

DONWAR, a clan or tribe of the Bhuinhar, found in considerable numbers in the districts of Mirzapur, Azimgarh, and Jaunpur; a few also reside in Gorakhpur. Some of them are called Rajputs, and others Bhuinhars. The Donwar clan of Rajputs was once in possession of the Doabi pargana, in the Ghazipur district. This tract has passed into the hands of the wealthy and influential raja of Domraon, but they continue to inhabit the soil in large numbers.—*Sherring.*

DOOLEY, a litter with wooden framework and canvas; a coarsely made palanquin, light and airy, generally used for carrying the sick.

DOOM or Doum, the gingerbread palm-tree, exclusively inhabiting Upper Egypt, especially the neighbourhood of Thebes, whence it is named Cucifera Thebaica. Its stem forks two or three times, thus assuming the appearance of a Pandanus. The fruit is about the size of an orange, angular, irregularly formed, of a reddish colour, and has a spongy, tasteless, but nutritious rind. The albumen of the seed is hard and semi-transparent, and is turned into beads and other little ornaments. Gœrtner described it under the name of Hyphæne coriacea. It is known in Egypt as the gingerbread tree, because of the resemblance of its brown mealy rind to that cake.—*Eng. Cyc.*

DOONA. *Thwaites.* A genus of great trees of Ceylon. D. affinis occurs between Ratnapura and Galle, at no great elevation; D. congestiflora, Tinneya-gass, SINGH., at Hinidoon and Pasdoon Corles; D. cordifolia, at no great elevation

at Pasdoon Corle and Ambagamowa; D. Gardneri, in the central province, at an elevation of from 3000 to 5000 feet; D. nervosa at Eknalagodde, near Ratnapura.—*Thwaites, En. Pl. Zeyl.*

DOONA TRAPEZIFOLIA. *Thw.* Tucca-haaloo-gass, SINGH. Grows as a common forest tree in the central and southern parts of Ceylon, up to 1500 feet.—*Thw.* p. 55.

DOONA ZEYLANICA. *Thw.* Doon-gass, SINGH. Grows in the central province of Ceylon, up to 4000 feet. A large quantity of colourless gum-resin exudes from the trunk and branches of this fine tree, which, when dissolved in spirits of wine or turpentine, makes an excellent varnish. The timber is highly prized for building purposes, and for shingles.—*Thw.* p. 34.

DOORS are generally open in India, and the number of servants about, admit of this. But when the doors are shut, before opening them, all the questions in Acts xii. 13 are put: 'And as Peter knocked at the door of the gate, a damsel came to hearken, named Rhoda.' A stranger approaching a house, does not attempt to open its door, but usually claps his hands two or three times together. This is called Thali dena. The English word Door is from the Sanskrit Dwar, and has its equivalent in Dar, Persian, and Duar, a boundary. The British in Calcutta retain a door or gate keeper, Dar-wan, who shuts the gates when visitors are not receivable.

DOPAEE. HIND. A variety of magic squares.

DO-PATTA. HIND. A scarf of silk or muslin; a cloth of two breadths used as a garment. The do-patta scarf, an exquisitely beautiful article of Indian costume for men and women, is worn more frequently by Mahomedan women than Hindu, and by the latter only when they have adopted the Mahomedan lunga or petticoat; but invariably by men in dress costume. By women this is generally passed once round the waist over the petticoat or trousers, thence across the bosom and over the left shoulder and head; by men, across the chest only. Do-pattas, especially those of Benares, are perhaps the most exquisitely beautiful of all the ornamental fabrics of India; and it is quite impossible to describe the effects of gold and silver thread of the most delicate and ductile description imaginable, woven in broad, rich borders, and profusion of gold and silver flowers, or the elegance and intricacy of most of the arabesque patterns of the ribbon borders or broad stripes. How such articles are woven with their exquisite finish and strength, fine as their quality is, in the rude handlooms of the country, it is hard to understand. All these fabrics are of the most delicate and delightful colours,—the creamy white, and shades of pink, yellow, green, mauve, violet, and blue, are clear yet subdued, and always accord with the thread used, and the style of ornamentation, whether in gold or silver, or both combined. Many are of more decided colours,—black, scarlet, and crimson, chocolate, dark green, and madder; but whatever the colour may be, the ornamentation is chaste and suitable. For the most part, the fabrics of Benares are not intended for ordinary washing; but the dyers and scourers of India have a process by which the former colour can be discharged from the fabric, and it can then be re-dyed. The gold or silver work is also carefully pressed and ironed, and the piece is restored, if not to its original beauty, at least to a very wearable condition. The do-pattas of Pytun, and indeed most others except Benares, are of a stronger fabric. Many of them are woven in fast colours, and the gold thread—silver is rarely used in them—is more substantial than that of Benares. On this account they are preferred in Central India and the Dekhan, not only because they are ordinarily more durable, but because they bear washing or cleaning better. In point of delicate beauty, however, if not of richness, they are not comparable with the fabrics of Benares. Scarfs are in use by every one,—plain muslins, or muslins with figured fields and borders without colour, plain fields of muslin with narrow edging of coloured silk or cotton (avoiding gold thread), and narrow ends. Such articles, called sehla in India, are in everyday use among millions of Hindus and Mahomedans, men and women. They are always open-textured muslins, and the quality ranges from very ordinary yarn to that of the finest Dacca fibres. No attire is so becoming to the delicate form of a woman as the Hindustani garments anga and do-patta. A woman in European attire gives the idea of a German manikin; an Asiatic in her flowing drapery recalls the statue of antiquity. These scarfs are manufactured at various places, and of different qualities and colours. Those brought from Benares, always with gold and plain lace borders of different sorts, are sold at from 25 to 350 rupees each. Those of Arnee, in the collectorate of Chingleput, with borders of yellow cotton, are priced at from 2 to 7 rupees each, and those of Oopada in Rajamundry are woven with white borders, and are sold at from 1½ to 3 rupees each.—*Dr. Watson; Tr. of Hind.* ii. p. 37.

DOR, a tribe of Rajputs, some of whom, mostly converted to Mahomedanism, are settled in the Alighur district, also about Banda and Saugor. Time has destroyed all knowledge of the history of this branch, but they must have been of importance in the time of the last Hindu sovereign of Dehli, Prithi-raj, as he commemorated a victory over them by a tablet. Before the emigration of the Bir Gujur race, they were the chief proprietors of Alighur, and a remnant of them now exists in Dubhaee, Atrowlee, Coel, Shikarpur, and Burun. —*Elliot; Tod; Wilson.*

DOR. HIND. Land ploughed twice; from Do, two. When ploughed three times, it is called Teoor; when four, Chawur.

DOR, the modern village Athebia, the first place towards Jaffa; it is the Castel Pelegrino of the crusaders, and the Dor of the Hebrews. Its columns and buttresses are a confused mass, stretching into the waves, over which the surf breaks. Dor is the celebrated city of Cæsarea.—*Skinner's Journey*, i. p. 96.

DORA, with the Tamil and Telugu races, is equivalent to the English words, Sir, Master, and to the Arabic Sahib. Both in its singular and plural forms, Doravadu, Doragaru, Dorawanlu, it is a title of the Konda Doralu, the chieftains in the mountains of Gumsur. Dorasani is a lady.

DORADINA, a group of fishes of the family Siluridæ stenobranchiæ.

DORADO, one of the dolphins.

DORAN, woollen cloth of Kulu.

DORDONIA ORIENTALIS, hop wood of Nor-

folk Island, does not attain to more than a foot in diameter, and is principally used for veneering and in turning ornaments.—*Keppell's Ind. Arch.*

DOREMA AMMONIACUM. *Don.*

Ferula orientalis.	Ferula ammonifera, *Fee.*
Feshuk, ... ARAB.	Simugh teratees, . PERS.
Oshak, ... PERS.	Simugh b'us-shirin, ,,

A glaucous green plant belonging to the natural order Umbelliferæ, with a perennial root, and large leaves two feet long. It is a native of Persia, in the plains of Yerdekhast and Kumisha, in the province of Irak, and near the town of Jezud Khast, in very dry plains and gravelly soil, exposed to an ardent sun. It is one of the plants which yield gum ammoniacum, but it is probable that several plants yield this, as well as the other gum-resins, of the order Umbelliferæ. This gum-resin is imported into Bombay from the Persian Gulf, and re-exported to different countries. It is obtained by incisions in the plant, and occurs in two forms,—first, in voluminous masses of yellowish colour, enclosing white almond-like tears, the whole being of plastic consistence, and very impure; secondly, in tears of irregular form, white or yellowish, opaque, rather solid, agglutinated or distinct, compact, brittle, of glassy fracture, and free from impurities. Its odour is faint and peculiar, taste sweetish and then bitter. It is partially soluble in water, ether, alcohol, alkaline solutions, and acetic acid. Its medical effects are similar to, but less powerful than, asafœtida. It is principally employed as an expectorant in the chronic catarrhs and asthmas of old persons. It is also applied externally as a warm and stimulating plaster.—*Lindley, Fl. Med.; Eng. Cyc.* p. 335; *Faulkner; O'Sh.* p. 364; *Powell*, p. 354. See Asafœtida; Ferula Persica.

DOREY or Dori, a village in New Guinea, in which the houses are built on posts in the water, and are reached by long rude bridges. The houses are low, in the form of a boat bottom upwards. In Dori the Papuans are called Myfore. They are about 5 feet 3 inches high; few attain 5 feet 6 inches. They wear their crisped hair its full length, and generally uncared for, which gives them a wild, scared appearance. The men, not the women, wear a comb. The beard is crisp. The forehead is high and narrow; eyes large, dark brown, or black; nose flat and broad; mouth large, lips thick, and teeth good; few have regular features, and most are apathetic. The ordinary men wear a waist-cloth made of the bark of a tree, called Mar, which is wrapped round the waist and passed between the legs. Women wear a short sarong to the knee, generally of blue cloth. Men and women tattoo their bodies, by pricking the skin with a fish bone and rubbing in lamp-black. The Dori people are seafarers, fishers, and traders, and are expert swimmers and divers. Their prahus have outriggers, and are excavated from the trunk of a single tree. Their food consists of millet, obi, maize, a little rice, fish, and hogs' flesh, and fruits; sago is imported in small quantities. Theft is considered a grave offence. The people resemble the Ke and Aru islanders. Their colour is a deep brown, often approaching closely to black. On a pole near the stem of the boat, they place, chiefly for ornament, a thin, finely-carved red-and-white striped plank, sometimes furnished with the image of a Papuan's head, with out-sticking hair, made from gomuti fibres or cassowary feathers. Respect for the aged, love of their children, fidelity to their wives, are traits which reflect honour on their disposition. Chastity is held in high regard, and is a virtue which is seldom transgressed by them. A man can only have one wife, and is bound to her for life. Concubinage is not permitted. Adultery is unknown amongst them. They are generally very fond of strong drink. They do not make any fermented liquor, not even sagoweer or tuak. Kidnapping is general in these countries. The hillmen, or Arfak, of the interior are generally black, but some are brown. Their hair, though always more or less frizzly, is sometimes short and matted. The Arfak mountains are about ten thousand feet high, and inhabited by savage tribes. Birds of paradise are brought to Dori for sale from Amberbaki, about a hundred miles west. —*Wallace*, ii. p. 18.; *Earl*, p. 71; *Journal of the Ind. Arch.*, June 1852, pp. 312 to 317.

DORI. HIND. An iron straining ladle to separate the curd for cheese-making.

DORI. HIND. A kind of edging or narrow braid in gold and silk. Dorihar, a pedlar selling laces and thread; also a Saiva mendicant living partly by the sale of thread. Dori means a small twine or thread, or cording edging, used for the edges of clothing, similarly to nakki, gota, kinari, patti, mandil, and zardozi.

DORIA. HIND. A cotton fabric coloured with fine stripes, one of the piece goods of India.

DORIA. HIND. A leash, consisting of a bunch of silk thread fastened at the ends; they are often worn to suspend charms or amulets, etc., round the neck.

DORIAN, the fruit of the Durio zibethenus; it is pleasant-tasted, but of most offensive persistent odour, though the natives of Amherst and Malacca are very fond of it. They cost three rupees each at Moulmein.

DORIDÆ, the sea-lemon family of molluscs. Doris Barnardi, *Kelaart*, has rich colours. D. exanthemata, *Kelaart*, of Formosa, Labuan, and Borneo, is nearly eight inches long, of an olive green colour, and is the largest known nudibranch. Its besses and tubercles render it an unpleasing object.—*Colld.*

DOR-KHAIR. HIND.? A tree of Chutia Nagpur, with hard, yellowish-red timber.—*Cal. Cat.*

DORO. SIND. Unripe fruit of Capparis aphylla, *Roxb.*

DORVILLE and Grueber, two Romish missionaries who travelled in Tibet in the middle of the 17th century. They crossed China from Pekin by Sin-gan-foo to Sining, reached the Koko-nor valley, and thence passed into Tibet round the sources of the Hoang-ho, and, crossing those of the Yang-tze-kiang river, they came on from thence to India, through the valley of Nepal by Khatmandu and Hetounda to Patna on the Ganges, where Dorville died.—*Prinsep, Tibet*, p. 14.

DORYANTHES EXCELSA, a lofty tree Amaryllis, the gigantic lily of the sea-coasts of Australia between Sydney and Botany Bay. It is a magnificent plant, with a lofty flowering spike. The height of the flowering stem is from 10 to 20 feet, bearing a terminal cluster, 12 to 14 inches in diameter, of crimson flowers. In the beautiful Illawarra district it is found in the greatest perfection, and attains its full magnitude and beauty about the mountain ranges. It is supposed that

a useful flax could be made from the fibres of its leaves. It should be introduced into India.—*G. Bennett*, p. 340.

DORYMA-BERDMOREI. *Blyth.* A genus of the Geckotidæ found in Mergui.

DOSAD, in Bengal, a low caste employed as executioners, to remove dead bodies, as village watchmen and messengers. In Bengal and Behar, the work of labourers is done by Bhui, Rajwar, and other aboriginal tribes, but Chandal, Dosad, Hari, Bhumali, are names of other low-caste races; the Bhuimal, in Bengal, being the lowest or sweeper class. The Dosad of Behar used to make frequent predatory excursions into Lower Bengal. The Dosad men are of strong build, and as tall as the average Hindu; have coarse features, but with nothing of the Chinese or Negro about them. They have adopted the worship of the demon Rahu, who is supposed to cause eclipses by his periodical attacks on the sun and moon, in revenge for having had his head cut off by Vishnu. The Dosads not only adore him, but claim to be his descendants,—their upper class from Rahu and his wife, and their second class from Rahu and his wife's maid-servant. In their mode of worshipping their founder, the faithful ascend ladders formed of sword-blades, so placed as to bring the sharp edge in contact with the foot as they ascend. The Dosads aspire to higher employment than the Ghasi and Dom. They serve as village watchmen, and sometimes as police and as court runners. They live freely.—*Wilson; Dalton, Ethnol. of Bengal*, p. 326; *Campbell*, p. 129.

DOSALI, a caste who make leaf cups and leaf platters in India.

DO-SHAHI. HIND. A soil part clay and part sand; soil of two kinds mingled, hence its name, Do-mat, or two earths. See Do.

DO-SHALA. HIND., PERS. Double shawl, shawls being always worn double by the natives of India. The ordinary do-shala is a pair of shawls, made with the 'kinara' or border at different sides, so that one may be worn over the other for thickness as well as appearance, for then both sides show as right sides. See Do.

DOSHAM. See Polyandry.

DOSIA POWDER. The Japanese, instead of enclosing corpses in coffins of a length and breadth proportionate to the stature and bulk of the deceased, place the body in a box or tub, 3 feet high, 2½ feet in diameter at the top, and 2 feet at the bottom. They produce this result by means of a powder called dosia, which they introduce into the ears, nostrils, and mouth of the deceased, after which the limbs all at once acquire astonishing flexibility. Mr. Titsingh remarks that in October 1783, when the cold was already pretty severe, a young Dutchman having died in the island of Desima, next morning one of the interpreters put a pinch of powder, resembling the famous dosia powder, into the ears, another into the nostrils, and a third into the mouth, and in less than twenty minutes the body recovered all its flexibility. He was assured that in difficult labours, a cup of hot water, in which a little of the dosia powder, tied in a bit of white rag, has been infused, is administered to the patient. It has the appearance of sand, and when it is fully perfected for use, is as white as snow. It is obtained on the mountain of Kongosen or Kinbensen, in the province of Yamatto, where there are many mines of gold and silver. The process by which it is prepared is the secret of the priests. Their knowledge is doubtless the result of accidental experience, for their acquaintance with chemistry is so slight that we may safely conclude they do not understand the rationale of its preparation.—*Titsingh's Illustrations of Japan*, p. 283; *American Expedition to Japan*, p. 72; *Hodgson's Nagasaki*.

DOSILA, a cotton fabric with broad stripe in blue and orange.

DOSS, from Dasa, SANSK. A slave; a surname of many Hindu races in India, as Jaggadamba Doss. It has the same reference to the Hindu gods as the Abd or Ghulam of the present Arabs, slave to the Almighty, as Abd-ul-Kadar, Abd-Allah, slave of the Almighty, slave of God. This name among Hindus is borne chiefly by men of the Banya caste, by Byragi fakirs, and occasionally by Kayasths and Brahmans. It is usually coupled with the name of some deity, as Eswara Doss, Shib Doss, Narayan Doss, etc., to imply subjection to some special tutelary god.

DOST ALI in 1732 became nawab of the Karnatic, in succession to his uncle, Saadat Allah. He gave one daughter to Chanda Sahib, and one to Murtuza Ali, and he appointed Chanda Sahib to be his diwan. His succession had been disliked by Nizam-ul-Mulk, who in 1730 incited the Mahrattas to invade Arcot, and Dost Ali met them at Ambur on the 20th May 1740, and fell in battle. —*Orme.*

DOST MAHOMED KHAN was one of the younger sons of Sirfaraz Khan, a Barakzai sirdar, slain by order of Shah Zaman at Kandahar in 1799. The mother of Dost Mahomed Khan was of a Juanshir family. He succeeded Shah Shuja as ruler in Afghanistan. After a youth and early manhood passed in strife with his brothers and the Saddozai family, in 1826 he became supreme at Kābul. His youth had been neglected; but he now reformed, made a public acknowledgment of his past errors, taught himself to read and write, studied the Koran, abandoned the use of strong liquors, became scrupulously abstemious, plain in his attire, assiduous in his attention to business, urbane and courteous to all. He was a just ruler, and was supreme at Kābul until political difficulties induced the Indian Government, at the close of 1838, to resolve on displacing him and replacing the deposed king, Shah Shuja-ul-Mulk. This was done on 7th August 1839, after a series of successes and severe reverses, in one of which an entire brigade of British was destroyed by climate and the sword. It was the greatest disaster that ever befell the army of India. He was driven from his throne by the British in 1839, was taken prisoner to Calcutta, but was ultimately restored. He brought Kābul and Kandahar under his rule; when close on eighty years of age, he wrested Herat from Persian influence, and on the 9th June 1863 he died, twelve days after he had taken the city by storm. He left sixteen sons, who continued for many years a civil war of succession.—*Masson's Journey*, iii. p. 17.

DO-SUTI. HIND. A kind of coarse white cotton cloth. The words mean double thread. Do-suti, Tin-suti, Char-suti, literally, two-thread, three-thread, four-thread; kinds of cotton cloths. Kadee and Purum are other kinds.

Do-tahi, a quilt choghah, a wrapper or sheet.

Do-tara, a two-stringed musical instrument.

DOSWANIO. GUJ. A dealer in cloth, a pedlar of the Banya tribe.

DOTI, a province of Nepal bordering on Kamaon. Dūng is one of its subdivisions, and the Dūng people are called Dūnāl.

DOUBLE-HEADED SNAKE of Ceylon, Uropeltis grandis.

DOUBLETS, in jewellery, a thin slice of a pure gem cemented over a paste of same colour; or a paste of facetted crystal cemented over a pure gem.

DOUL. HIND. The ridge or small embankment dividing irrigated fields. Doula or Daula, a boundary. In many English games, as in barley-break, and occasionally in football, the limits are the doules, and the football is said to be douled.

DOUR, surrounded by the Waziri hills, and adjoining the western border of Bunnu, is the small valley of Dour, inhabited by a distinct race, and containing about 8000 inhabitants. This valley originally belonged to the Dourani kingdom. It was, together with other outlying tracts, formally ceded to Ranjit Singh by the tripartite treaty of 1838; but afterwards, in 1847, the British relinquished all claim to it on behalf of the Sikhs. The people of Dour more than once expressed a wish to come under British jurisdiction, but the offer was not accepted. During the treaty negotiations of 1855, the amir's representative urged that the valley once formed an integral portion of the Dourani empire, and that his highness now wished to take it, provided that the British did not claim any title. The Government replied that the British did not desire to assert any claim, nor to interfere with the amir, if he chose to reannex it to his kingdom.

DOUR or Daur, HIND., in military life in India, is a sudden expedition against an enemy.

DOUR. HIND. The slings attached to a bucket for irrigation. The more usual terms are juta and joti.

DOURABA. —? A village watchman.

DOURANI, a name of the Abdali tribe, given to them by Ahmad Shah, Saddozai, on his ascending the throne in A.D. 1747, he designating them Dar-i-Dauran, Pearl of the World. They are also called Sulimani, from a district of which, the Tobeh Maruf, they formerly came. The Dourani are an agricultural, but chiefly a pastoral race, who term their summer and winter ground Ailak and Kishlak, dwelling in their coarse black camlet tents, called Kishdi, the same with the Kara-ulli of the Turks, and Siah-chadar of the Persians. The Dourani country is about 400 miles long, and, except in the north-west, the general breadth is from 120 to 140 miles. It is bounded on the north by the Paropamisan mountains, inhabited by the Aimak and Hazara; on the west it has a sandy desert of various breadth, beyond which, on the south-west, it has Seistan, and a desert which separates it from Baluchistan; its southern boundary is formed by Shorawak and the hills of Khajah Amran, which separate it from the Tarin and Kaka; and on the east it has no natural boundary, but joins to the lands of the Ghilzai, into which the valley of Urghessan, part of the Dourani territory, runs for a considerable extent. The number of Dourani tribes are nine, — Maku, Khugiani, Barakzai, Popalzai, Alikuzai, Achakzai, Nurzai, Alizai, and Ishakzai. The Popalzai are the largest. In person, the Dourani are stout and well-made, many of them being above the standard of the Indo-Germanic races of Europe. Some have round and plump faces. With others the countenance is strongly marked, and with most the cheek-bones are prominent. When a family is by itself, the men and women eat together; few restraints are put upon the female, and her influence is considerable. The Dourani tribes, all but the Achakzai, are religiously given, but not intolerant. They are of the Sun sect. Their national dance, called Attun, is danced almost every evening, with songs and tales to accompany it. They are fond of tales, and fond of the chase. The Dourani, especially the men of Kandahar, have a powerful love of country; the Dourani is rarely a merchant or adventurer. They are hospitable and brave, and are the most important of the Afghan tribes.

DOW, ALEXANDER, translated and published Ferishta's History of the Mahomedans of Asia.

DOW, a vessel employed in the trade between the Red Sea, the Arabian coast, the Gulf of Persia, and the W. coasts of India, in Cutch, Gujerat, and Malabar. They were also used in the Persian Gulf for the purpose of war and piracy. They are always manned by Arabs. The Arab dow is of about 150 to 250 tons burden by measurement; grab-built, with 10 or 12 ports; about 80 feet long from stem to stern, 20½ feet broad, and 11½ feet deep. These vessels have a great rise of floor, are calculated for sailing with small cargoes, and are fully prepared, by internal equipment, for defence, with decks, hatchways, ports, poop-deck, etc., like a vessel of war; many of them are sheathed, on 2½ inch plank bottoms, with one-inch board, and a preparation of chunam and oil, which is called galgal, put between the planks and sheathing-board, causing the vessel to be very dry and durable, and preventing the worm from attacking the bottom. The worm is one of the greatest enemies in India to timber in the water, while the white ant is as much so out of it. On the outside of the sheathing-board there is a coat of whitewash, made from the same articles as that between the sheathing and planks; which coat is renewed every season they put to sea. These vessels have generally one mast, and a lateen sail; the yard is the length of the vessel aloft, and the mast raking forward, for the purpose of keeping this ponderous weight clear in raising and lowering. The tack of the sail is brought to the stern-head, and sheets aft in the usual way; the halyards lead to the taffrail, having a pendent and treble purchase-block, which becomes the backstay, to support the mast when the sail is set; this, with three pairs of shrouds, completes the rigging, which is very simple, the whole being of coir rope. Several of these vessels were fitted as brigs after their arrival in Arabia, and armed by the Arabs for cruising in the Red Sea and Arabian Gulf, as piratical vessels; they are also the class of vessels of which Tipu Sultan's fleet at Honore consisted. When armed, they were too powerful for the Bombay marine brigs, when weak and unsupported. The large dows make generally one voyage in the season to the southward of Arabia, taking advantage of the N.E. monsoon, and the S.W. to return with an exchange cargo. They generally bring dates, fruit, preserves, Shiraz wine, and horses, and take back rice, coir, canvas, cocoanuts, oil, timber, dammer, etc., various articles of

cloth of the country manufacture; and from Bombay, European articles of every description. The trade of the western coast of India is very great in those vessels; extending from Allipey, the southernmost port on the coast of Malabar, up to Bombay; but all the trade to Bengal is carried on by ships which are called country traders, from the Gulf of Persia and Arabia. The Arabs usually navigate their ships to Bengal in perfect safety, and with great skill.—*Edye; Malcolm.*

DOWLAISHWARAM, a small town in the Rajamundry taluk of the Godavery district, in lat. 16° 56′ 35″ N., long. 81° 48′ 55″ E., and 7252 inhabitants.

DOWLAT. ARAB. Wealth, prosperity. Umr-o-dowlat ziadah, May your days and your prosperity be prolonged. Dowlah, a state, a kingdom. The fifth title amongst Indian Mahomedans, as Suraj-ud-Dowlah, Rashid-ud-Dowlah. In Southern Arabia, a dowlah is a governor of a province, equivalent to the Turkish title of Pasha. Doulat-ul-Aliyah-al-Usmaniyah, the Othoman Government.

DOWLATABAD, in lat. 19° 57′ N., long. 75° 14′ E., in the Dekhan, 9 miles N.W. of Aurangabad. Mean height of the village, 1721 feet. Its fortress, which was first known as Deoghur or Deogiri, consists of a conical greenstone rock, the base of which is scarped to a height of 120 feet from the ground. The upper conical part is reached by means of an opening at the base of the scarp, which gives admission into a low narrow passage, hewn out of the solid stone, and opening into a large chamber or vault that has been excavated in the interior of the hill. From this vault a vamp or gallery, gradually sloping upwards, and also excavated in the solid rock, winds round the interior. It has a height and breadth of 12 feet, and terminates above in a recess on the top of the rock about 20 feet square. At the base of the rock is a ditch, which is crossed only at one place, and by a causeway on which only two men abreast can walk, and defended on the side next the rock by a battlemented building. Outside the ditch is a minaret 100 feet high. Its position is commanding, and it has from the most ancient times been a stronghold of the rulers in that part of India. It was the capital of Ram Deo, a prince of so great power that the Mahomedans looked on him as king of the Dekhan. Ala-ud-Din, nephew and general of the emperor Firoz, in 1294 swept across the Nerbadda with an army of 8000 men, and presented himself before Deoghur, which he captured. He entered into negotiations with the raja, and, besides money and jewels, obtained the cession of Ellichpur and its dependencies, and the raja was further to pay tribute annually. On his return, he was met by his uncle Firoz, whom he assassinated, as he was being patted by him on the cheek. Kamala Devi was the wife of the raja of Gujerat, and was celebrated as the flower of India. On the fall of Nerwalla, the capital of Gujerat, her husband became a fugitive, and Kamala Devi was taken prisoner and carried to Ala-ud-Din's haram, and, attracted by her beauty, wit, and accomplishments, he made her his queen. Her fascinations soothed that savage Pathan in his moodiest hours, and influenced him to a lenity hitherto unknown to him. Her daughter, Dewala Devi, had escaped with her father. Her reputation for beauty equalled that of her mother, and the son of Ram-deo, the raja of Deogiri (Dowlatabad), had long sued for her, but her father, proud of his Rajput origin, would not accept a Mahratta, even though a prince. Kamala Devi, however, having expressed to Ala-ud-Din a wish to be joined by her daughter, Ala-ud-Din sent a strong army, under a general, to bring Dewala Devi to Dehli. In this extremity her father accepted the Mahratta prince, and sent off his daughter to Deogiri under an escort, but the escort was overtaken, the fair maiden seized and carried to Dehli, when Khizr Khan, the son of Ala-ud-Din, married her. Their union was very happy, and the poet Khusru praised them. In five years from the death of Ala-ud-Din, the throne of Dehli was filled by Kafur, a converted Hindu, who filled the capital with Hindu troops, put out Khizr Khan's eyes, put to death all the survivors of Ala-ud-Din's family, and transferred Dewala Devi to his own zenana.—*Wilson; Briggs, The Nizam.*

DOWRY, the mahr, dota, and jahaz of the Mahomedans. According to the law of Moses, Exodus xxii. 16, Deuteronomy xxii. 29, 1 Samuel xviii. 25, Hosea iii. 2, the dowry of Hebrew women was from thirty to fifty shekels. In Arabia and in Egypt, the mahr of the Mahomedan woman is a sum commensurate with the bridegroom and bride's condition in life. In India it is usually an ideal amount, fabulously large, the object being to prevent divorce, which in India is almost unknown. The dowry of the Mahomedans is the gift of the bridegroom to the bride agreed to during the marriage ceremony. It is her own money, and must be paid unless she waive her claim to it. This the Mahomedan wife often does, sometimes at the point of death, in order to prevent her children claiming it from their father.

With Hindus, the practice as to money gifts at marriage varies. With some races the bridegroom pays money or cattle for his bride; others receive a dowry with the bride. Menu (Institutes, iii. 51, and ix. 93) mentions both customs. In the N.W. Provinces, among the agricultural races, the bride's father gives a dowry with his daughter. It is the poverty originating from this which led the Rajputs to murder their infant daughters.—*Elliot.*

DOWSON, JOHN, M.R.A.S., author of a classical dictionary of Hindu mythology; editor of the posthumous papers of Sir Henry M. Elliot, K.C.B., which the latter had begun under the title of The History of India as told by its own Historians. It reached eight volumes, and occupied eleven years—1867 to 1877.

DOWYAT. BURM. A timber tree; maximum girth 3 cubits, maximum length 18 feet. Found abundant, but always inland, all over the country, at Amherst, Tavoy, and Mergui. When seasoned, floats in water. It has a soft, bad wood, useless except for elephant bells.

DO-ZANOO BYTHNA. HIND. To kneel on both knees.

DOZUK. HIND. Hell; the seven hells.

DRACÆNA, a genus of plants belonging to the Liliaceæ, known as the dragon trees. Several species, mostly shrubs, grow in the East Indies, China, Madagascar, the Archipelago, Bourbon, the coast of Africa, and Canary Islands. One mentioned by Sir G. Staunton had a diameter of 12 feet at 10 feet from the ground. The singular

red-leaved Chinese iron-wood, a species of Dracæna, is chiefly noticeable for its long red leaves. D. draco is the indigenous dragon tree of Orotava in Teneriffe. It affords a similar secretion to that of Calamus draco. The tree at Teneriffe measured 17 feet in diameter. It was known to be a very ancient tree in 1406, and was destroyed by a gale in 1867.—*Roxb.; Williams' Mia. Kingd.* p. 279; *O'Sh.*

DRACÆNA ATRO-PURPUREA. *Roxb.*

Kwon len net, . . BURM. | Kwon len phyoo, . BURM.

Two or more species of the dragon tree, resembling small areca palms, are seen in Burmese compounds, but the most common is this one, with dark purple leaves.—*Mason.*

DRACÆNA TERMINALIS. *Willde.* A native of China, the Eastern Archipelago, and Pacific, where its root is called Ti; is considered valuable in dysentery and diarrhœa. The plant is a signal of truth and of peace in the Eastern Archipelago. A sweetish juice is expressed from its roots, and afterwards reduced by evaporation to a sugar. M. Gaudichaud mentions that in the Sandwich Islands generally an intoxicating drink is prepared from this root, to which the name Ava is often applied, as well as to that made with the roots of Piper methysticum. The root is employed as food in the Fiji Islands; it weighs from 10 to 40 pounds.

DRACO, a genus of reptiles of the family Agamidæ:—

Draco fimbriatus, *Kuhl*, Penang, Sumatra.
D. tæniopterus, *Gunth*, Tenasserim.
D. volaris, *Linn.*, Singapore.
D. maculatus, *Gray*, Malacca, Tenasserim.
D. Dussumieri, *D. and B.*, Madras.

DRACOCEPHALUM CANARIENSE, the balm of Gilead, has pretty blue flowers. The scent only lies in the leaves, and the plant seldom exceeds 18 inches in height. Other species have large splendid blue flowers. D. Royleanum yields Tukhm-Balungu of Bombay, and is largely cultivated for medicinal purposes.—*Riddell.*

DRACONTIUM POLYPHYLLUM. *L.*

Jangli kandi, . . DUKH. | Kat karne, . . . TAM.
Purple-stalked dragon. | Adavi kandi, . . TEL.

Grows in the Konkans, on the western coast of India, at Bombay, and in Japan. Its root, after having undergone certain preparations to subdue its acrimony, is supposed to possess anti-spasmodic qualities, and is considered valuable in asthmatic affections, given to the quantity of 12 or 15 grains in the course of the day. It is also in native use in hæmorrhoids. In the dry condition in which it occurs in the bazars, it has, though faint, a smell not unlike that of musk.—*Ains. Mat. Med.* p. 73.

DRAGOMAN. TURK. An interpreter; a dialectal change of the Arabic word, Tarjuman, a translator. Since the 7th century B.C., from the time of Psammetichus I., this as a distinct class has existed in Egypt, and is mentioned by Herodotus.

DRAGON. Dragons are supposed by the Chinese to inhabit the four oceans, Tonquin Gulf, China Sea, Eastern Sea, and Yellow Sea; and in A.D. 1725, the emperor Yung Ching, in the second year of his reign, conferred titles and other honours upon the four dragons, Hin Yan, Ching Hung, Shung Tai, and Tchu Ming.

DRAGON BOATS of China are long and narrow, capable of holding forty to eighty men. They are employed by the Chinese in their boat races and rowing matches, in the festival of the fifth day of the fifth month, usually falling in June, and seemingly relating to the summer solstice. During this festival, three-cornered dumplings of glutinous rice are eaten. They are wrapped up in the large, long leaves of the phragmites reeds.

DRAGON CANE, a kind of rattan, strong, springy, and much valued. They occur both light and dark coloured. A variety with a soft bark is called Manilla dragon cane.—*Seeman.*

DRAGON FLY of Ceylon, Euplœa splendens. See Insects.

DRAGON RIVER, or Kew-lung-keang, takes its rise in Yu-nam, on the frontiers of Se-fan, lat. 27° 20′ N. It is at first named Lan-tsan; but towards the south, and before it enters the Laos country, it is called Kew-lung-keang, or Nine Dragon River. In Chinese territory it runs a long distance through a magnificent valley. In lat. 16° N. it bends more to the west, and enters Cambodia, having previously been augmented by a large tributary. It then drains the whole length of that country, and falls by three embouchures into the sea, in about lat. 9° 34′ N. In many places the river is very deep; at others there are rocks, sandbanks, and shallows, which obstruct navigation. The river runs through Yu-nam, and there are cities upon it. In Laos villages adorn its banks, and in Cambodia the principal population is near it. It traverses eighteen degrees of latitude; it forms at its mouths an alluvial deposit second only to the Yang-tze-kiang or Hoang-ho.—*Royal Geog. Soc. Journ.* xxxiii.

DRAGON'S BLOOD.

Dam-ul-akhwain, . ARAB. | Hiraduckhun, GUJ., HIND.
Ki-lin-kieh, . . . CHIN. | Sanguis draconis, . LAT.
Hiueh-kieh, Chu-kieh, ,, | Jarnang, . . . MALAY.
Lung-sin-hiang, . ,, | Khun-u-lavan, . . PERS.
Indarume, . . . DUKH. | Catgamuruga-rakta, SANS.
Sang-dragon, . . FR. | Kandamurga rattam, TAM.
Drachenbluth, . . GER. | Khadga-mrugam netru, TE.

The dragon's blood gum-resins of commerce are obtained from several plants. The fourth Chinese name means dragon's spittle gum-resin. As sold in China, it is the product of two plants, probably the Pterocarpus draco, the other the Calamus draco. Pterocarpus draco wood when first cut presents no marks of redness, but in a little time red drops begin to exude from the wood. In about ten minutes they become hard and clear, and are collected. All the dragon's blood obtained, now, in the market is said to be from several species of Calamus, C. petræus (*Lour.*), C. rudentum (*Lour.*), C. verus (*Lour.*), and C. draco (*Willd.*), natives of Hindustan, Cochin-China, the Moluccas, Borneo, and Sumatra; but Linnæus reckoned the last three mere varieties of the C. rotang (*Linn.*). Its ripe fruits are covered with a reddish-brown dry resinous granular matter, which is obtained by beating or thrashing the fruit in little baskets. Within the Archipelago, the principal place of production is Jambi, on the N.E. side of Sumatra. The plant is not cultivated. The collectors are the wild Kubu, who dispose of it to the Malays at a price not much exceeding a shilling a pound. The best kind imported into Europe in reeds is manipulated by the Chinese. The canes of the male plant used in former times to be exported to Batavia, and very probably formed the 'true Jambees,' com-

memorated in the Spectator as the most fashionable walking-sticks in the reign of Queen Anne. The secretion of the fruit constitutes the best of jur-nang, or dragon's blood. A second and rather inferior kind is produced by heat, and by bruising the fruit, from which the natural secretion has been removed. The third, and most inferior, seems to be the refuse of the last process. It is perhaps doubtful whether it is ever procured from the plant by incisions. Quantities of this drug are annually sent from Banjer Massing in Borneo to Singapore and Batavia, and thence to China, where it is much prized. In Europe it is a constituent of some tooth-powders and tinctures, but is chiefly used for colouring spirit and turpentine varnishes. It is found in the market either in oval drops, or in large and impure masses composed of several tears. That which is good is of a bright crimson when powdered, and if held up to the light in masses, is semi-transparent. It is often adulterated with other gums. It is sent to the Chinese market in reeds, at 15 to 35 dollars per pikul, principally in native vessels. The price in China varies from 80 to 100 dollars a pikul, after purifying and refining.—*Faulkner; Morrison; Marsden's Sumatra*, p. 159; *Crawfurd; Seeman on Palms.*

DRAGON'S BONES, the Lung-kuh of the Chinese, is fossil ivory. Dragon's teeth are the Lung-chi of the Chinese. Dragon's teeth and dragon's bones, in use in Chinese medicine, are the fossil teeth and bones of various extinct mammalia of the tertiary series of rocks, such as those of the Rhinoceros trichorhinus, also those of a mastodon, an elephant, a horse, two species of hippotherium, a species of stag, and the teeth of a large carnivorous animal. The fossil teeth of the Stegodon Sinensis, *Owen*, are likewise so called; as are also the horns of the Chalicotherium Sinense, *Swinhoe*, the teeth of Hyla Sinensis, the molars of mastodons, elephants, sheep, stags, and teeth of two species of hippotherium.

DRAMA. Mahomedan countries have never cultivated the drama, if we except the passion play of Hasan and Husain in Persia and Bombay, which is rather a religious commemoration than a drama proper. The older Semitic literature contains no dramatic pieces at all. With Hindus, and with the Buddhists of Burma and China, the drama has formed a branch of literature, and the performances have been an amusement to the people from the most ancient times. In 1877, 102 dramas were published in India; and there were 196 works of fiction and 697 works of poetry. The dramas of the Hindus intermingle various dialects, as also prose and verse.

The dramatic performances in South India possess many interesting features which would be creditable to the actors of any nation. The histrionic art is extensively practised, but so seldom receives substantial encouragement from the purses of its admirers, it is matter for astonishment that it should have made any progress at all. The graceful modulations of voice, expression of countenance, propriety of gesture,—not to speak of the grotesque dress, and the peculiar music of the performers,—rivet a stranger's attention.

Like every other trade or profession in India, acting is confined to one particular caste, though it sometimes happens that outsiders join a dramatic corps, which has no settled abode, but stroll from place to place in quest of employment. Tanjore has the largest number of these itinerant actors, and their performances are reputed to be the best in South India. Female performers are rarely to be met with in districts farther south; but their places are easily supplied by young men of effeminate appearance, who have been trained from infancy to speak in a high-pitched, melodious tone of voice. The actresses of Tanjore have their headquarters at Ammanpettah, in the same district. They frequently play a heroic part on the stage, by personating kings, rishis, and heralds, especially in a popular historical play called Markandan's Nadagam. Both men and women sometimes assume strange and objectless characters, to the infinite gratification of their patrons. About the year 1870, in Madras and Bombay, dramas were largely acted, and attracted crowds.

In the Tamil drama, anything like the scientific divisions of tragedy and comedy, and the nicer classifications which obtain among more advanced nations, is nowhere to be seen. Nor have the Hindus been more careful in dividing a play into acts and scenes, or in portioning out a piece among different actors.

The best of the ancient Sanskrit dramas have been translated into Tamil and other languages. Portions of these are sometimes acted at weddings. When a nautch is given, a drama is occasionally performed. Generally, however, in the south of India, the drama is humble as to its attendants, owing, perhaps, to the extraordinary fondness of the people for the splendid processions, and night festivals of temples, and their ceremonies. The Toy Cart was written in Sanskrit about the commencement of the Christian era. In it the king is dethroned for tyranny, by a cowherd. In the Uttara Rama Charitya, the great monarch Rama is compelled by the clamours of his people to banish his beloved queen. The Pui of the Burmese is their favourite dramatic display, and no festival is deemed complete without a performance of this kind; the entire race are passionately fond of them. The puppet-shows or marionettes, however, is their legitimate high art drama. The figures are 2 to 3 feet high, and they are cleverly moved on a bamboo platform, —animals, ships, supernatural beings; and the dialogue is in polished language.—*Forbes*, p. 152; *Imp. Gaz.; Ward*, iv.

DRAPER, COLONEL, a British officer, who entered into a literary contest with Junius. He conquered Manilla, and in 1758 joined Colonel Lawrence in the Karnatic, and gave able assistance at the battle of Wandiwash.

DRAPER, MRS. ELIZABETH, the Eliza of Sterne, was born at Anjengo. She was married to Mr. Draper, one of the E. I. Company's Council at Surat. Her monument of marble is in a Bristol church.

DRAS, a district of Ladakh. Kargil, a little fort, is situate near the junction of the Zakut and Kartse, which flow into the Dras a short way to the north of Kargil. In the upper part of its valley, the sides are marked by descending glaciers and beds of snow. The Dras people in general are very ugly; their dress consists of a round pork-pie cap of black material, fitting close to the head, a thick woollen gown reaching midway beyond their knees, with their legs wrapped in bandages of cloth; and boots.

reaching above the ankles, of the same material, with under-surfaces covered with leather. The females muffle up in piles of clothing; and both sexes frequently clothe themselves in sheep and goat skins, with the woolly side inwards.

DRASHTI DOSHAM. SANSK. Evil eye.

DRAUPADI was the daughter of Drupada, king of Panchala. She was put forward by her father as the lady of the swayamvara, or tournament. Famed for her beauty, many rajas and chieftains attended her swayamvara, where she promised to accept the competitor who should on the first attempt shoot an arrow through the revolving chakra, and hit the eye of the golden fish beyond. Karna wished to try, but Draupadi declared she would not wed with a charioteer's son. Sisupala, raja of Chedi, and Jarasandha, raja of Magadha, both tried the bow, and failed; but Arjuna, one of the Pandava princes, bent the bow, and hit the mark, and Draupadi threw the garland around his neck, and accepted the five brothers as her husbands. Yudishtra was a gambler, and staked and lost the throne of Indra to Duryodhana; to recover it, he hazarded the beautiful Draupadi. By the loaded dice of his foe, she became the goli of the Kaurava chief, and underwent great hardships till the destruction of the Kaurava. Duhsasana, one of the Kaurava princes, dragged her by the hair into the public court; Bhima vowed to kill him for the insult, and drink his blood, and he fulfilled his vow.

Draupadi, as the polyandric wife of the Pandava princes, is the heroine of the Mahabharata. Yudishtra and Draupadi have been deified, and their feast is named the procession of fire, because in Hindu legend she is fabled to have passed every year from one of her five husbands to another, after a solemn purification by that element. In the Bhasha language, her name is written Dropti. In the drama of the Enchanted Fruit, when Draupadi and her five husbands entered the garden, Arjuna, with an arrow, brought down the fruits,—

> 'Light-pinioned gales, to charm the sense,
> Their odorif'rous breath dispense:
> From Béla's pearl'd or pointed bloom,
> And Malty rich, they steal perfume.
> There, honey-scented Singarhar,
> And Juhy like a rising star,
> Strong Chempa, darted by Camdew,
> And Mulsery of paler hue,
> Cayora which the Ranics wear
> In tangles of their silken hair,
> Round Babul flow'rs, and Gul-achein,
> Dyed like the shell of Beauty's Queen,
> Sweet Mindy pressed for crimson stains,
> And sacred Tulsy, pride of plains,
> With Sewty, small unblushing rose,
> Their odours mix, their tints disclose,
> And, as a gemmed tiara bright,
> Paint the fresh branches with delight.'
>
> —*Wh. H. of I.; Sir W. Jones*, xiii. p. 217.

DRAVEE. The Bombay group consists of fifteen or twenty islands in all, viz. the island of Bassein, about 30 miles to the northward of that which gives the cluster its name; Dravee and Versova, just off the shore of Salsette; Salsette, by much the largest of them all; Trombay, conspicuous for the mountain called Neat's Tongue, which attains the altitude of 1000 feet; Bombay itself, united on the northward to Trombay and Salsette, as these are united to each other by bridges and embankments, and to the southward, Old Woman's Island; Colaba; and Henery and Kenery; with little rocks and islets of lesser note and name.

DRAVIDA, a class of the Brahmanical tribes called the five Dravir, comprehending all those of the Peninsula, or Dravira, Karnata, Telinga, Gujerata, and Mahratta.

DRAVIDIAN, a term which Dr. Caldwell applied to the peoples and to the vernacular tongues of the great majority of the inhabitants of Southern India. Dravida is used in Sanskrit Brahmanical writings as an ethnological and philological term. Menu mentions the inhabitants, the Dravida, as out-castes and barbarians, *i.e.* not in communion with Brahmans. In the Brihat Sanhita of Varaha Mihira, A.D. 404, Dravida is described as divided into Chola, Pandya, Kerala, Karnataka, Kalinga, and Andhra. Philologists identify the words Arava, Dravida, and Tamil, and identify these with the Peutingerian tables, and the Limyrice of Ptolemy. The eastern and southern parts of the Peninsula of India, from the Vindhya mountains and the river Nerbadda to Cape Comorin, appear to have been peopled from the earliest period by different branches of one and the same race, speaking different dialects of one and the same language; and scattered offshoots from the same stem are to be traced still further to the north and to the west, as far as the Rajmahal hills and the mountain fastnesses of Baluchistan. Their line of route to their present sites, and the time of their advent, are alike unknown. They are generally supposed to have streamed through the passes of the Himalaya, and also from the west side of the Indus.

Fergusson, however (Ind. and E. Arch. p. 12), says if they came into India in historical times, it was not from Central Asia, but from Babylonia, or some such southern region of the Asiatic continent. Mr. Logan is of opinion that a Negroid race once occupied S. India; and Professor Huxley has expressed the opinion (J. Eth. Soc. 1869) that the Dravidian, Tamilar, and the Australian are the same race.

Researches into the families of language to which the spoken dialects belong, and the existing physical peculiarities of the several races, permit the belief that India and the island parts of South-Eastern Asia were peopled long prior to historic times, and that a succession of races, or of branches of the same human family, have entered India, and in some instances become amalgamated with or been dispersed amongst the prior occupants, or have pushed them further on into less peopled or less fertile districts, or amid forest and mountain tracts. In India proper, from the Himalaya to Cape Comorin, even yet, every village and every hamlet have small bodies of predial slaves, who, though possessing certain minor agricultural and civil rights, are not allowed to purchase lands, are compelled to reside outside the village walls, and are prevented quitting the locality, for they furnish the only free labour available for the work of the field. On this point Chevalier Bunsen mentions (Report, Brit. Association, 1847) that throughout Asia, the two great nations, who once centred the one in the Altai and the pasture land towards the Himalaya, the other having its centre in the Ural mountains, appear in Asia as the subdued or primary element, as the subdued substratum

of Iranian civilisation, and that the aboriginal languages of India, which attained their full development in the Dekhan dialects, belong to that stock.

Professor Rask of Copenhagen, and Dr. Caldwell, have given the opinion that the Dravidian languages are to be affiliated to the Scythian, Turanian, or Altaic group of tongues. The Turkish, Finnish, Hungarian, and Japanese languages, though in many particulars distinctly Turanian, have become still more inflexional than the Dravidian.

A general name for all these peoples has not been fixed upon. In India they have been called the Mongoloid, pre-Aryan, non-Aryan, Tamulian, Turanian, and Scythian. Several of them in India are highly civilised, with cultivated languages; others, though without a literature, and even predatory, form large nationalities; while there are many broken tribes, dispersed, homeless wanderers, or dwelling in forests. In Southern India the Mongoloid races are in two great branches, the Dravidian and the Kolarian; and their number has been estimated at 48,670,000, of whom the illiterate Mair, Meena, Kol, Bhil, Santal, and Gond constitute 12,000,000. The Dravidian section speak the Tamil, Telugu, Canarese, Kodaga, Malealam, Tulu, which are cultivated tongues, and the other branches in the south speaking uncultivated Dravidian languages are the Kurumbar, Badaga, Irular, Toda, Kota, Male-Arisar, Ramusi, Gond, Khand, Khond, or Ku; while the branches in the Central Provinces, Chutia Nagpur, and Bengal, are the Oraon, Gadaba, Rajmahali, Bhuiya, Bhuinhar, Binjhia or Binjhwar, Kaur or Kaurava or Kaurai or Raj Kaur, the Koch'h, Rautia, Sabar or Savara, and Yerkala. Of these uncivilised branches, the Kurumbar and Irular speak Tamil, the Badaga, Kota, and Toda have dialects of Canarese, the Male-Arisar use Malealam, and the Ramusi Yerkala have the Telugu.

The people of the coasts of Ceylon are Dravidian of the Tamil stock. Those of Kandy, with their habits of polyandry, would seem to be allied to the people of Coorg, and Ceylon has a few wild races, the Gahaleya, Rhodia, and Veddah, in the forests and unfrequented parts.

In the Peninsula of India, where the Tamil is spoken in the extreme south-east by about ten millions of souls, the Tamil-speaking people are, generally speaking, a dark-coloured and short-statured race, energetic, fiery, quarrelsome, but not vindictive. Most of them have embraced Brahmanism, but largely mixed with a devil and hero worship, and the worship of the local deities called Amman. Where the Telugu is spoken by about 15 millions of people, on the eastern side of the Peninsula, the people are a taller and fairer race than the Tamil, many of the more northern of them being equal in stature to the Aryan Hindus of the north. They are more Brahmanical than the Tamilians, and are as energetic as the latter, though less restless. The people who speak Canarese are about five millions in number, chiefly in the centre of the Peninsula; they are a tall and singularly graceful, dark, almost black race, with whom something akin to polyandry is very prevalent. The Malealam language in the south-west of the Peninsula is spoken by about 2½ millions, and the Tulu, on the seaboard somewhat to the north, by about 150,000. The people of Coorg and Mysore speak a Canarese dialect; and on the Neilgherry Hills are the Kota, the Toda, the Budaga, the Irular, and other small tribes. In the interior of the Peninsula are Gond tribes, and the Khand, Kund, or Ku, also Dravidian, who are estimated at half a million of souls, and the Bhils are of Kandesh and the Nerbadda, and Rajputana.

Dravidian aborigines deal in demonology, fetishism, frantic dances, bloody and even human sacrifices. They are, however, superior to the Aryan Hindus in freedom from disqualifying prejudices, but inferior to them in learning, and all its train of appliances.

Of the broken tribes, the Mhar, Dher, Madera, Holaru, Toty, and Pariah are labourers and village servants; the Mang, Chakili, and Madaga are leather-workers; the homeless Korawa, Yerkala, Bhatu, Domar, are mat-makers, fowlers, and athletes; the hillmen, Kotah, Toda, Irular, Kurumbar, Kadar, Chenchwar, Male-Arisar, Saora, Khand, Gond, Juanga, are in the mountains and forests and hilly country from the western and southern borders of Bengal, Behar, and Benares, to Cape Comorin, and from the Western Ghats inland to the Bay of Bengal.

Of all the Dravidian tongues, no two are so nearly related to each other as to be mutually intelligible to the people who speak them, except in the simplest and most direct manner. In the cultivated Dravidian tongues, Sanskrit words are not at all, or but very rarely, employed. Tamil was the earliest developed of all the Dravidian idioms, is the most copious, and contains the largest portion of indubitably ancient forms. It includes two dialects, the classical and colloquial, the ancient and the modern, called respectively the Shen Tamil and the Kodun Tamil, which so widely differ, that they may almost be regarded as different languages. The Tamil race is the least scrupulous or superstitious, and the most enterprising and persevering of Hindus. They swarm wherever money is to be made, or wherever a more apathetic or a more aristocratic people is waiting to be pushed aside. The majority of the Hindus found in Pegu, Penang, Singapore, and other places in the east, where they are known as Klings, are Tamilar. All throughout Ceylon, the coolies in the coffee plantations are Tamilar; the majority of the money-making classes even in Colombo are Tamilians; and ere long the Tamilians will have excluded the Singhalese from almost every office of profit and trust in their own island. The majority of the domestic servants and of the camp followers in the Madras Presidency are Tamilians; and the coolies who emigrate to the Mauritius and the West India Islands were largely Tamil. Including the Tamil people who are residing in the military cantonments and distant colonies, and those in Mysore, south Travancore, northern Ceylon, and excluding all Mahomedan, Teling, and Brahman residents of the Tamil country, who amount to at least ten per cent. of the whole population, the people who speak the Tamil language were estimated by Dr. Caldwell at about 10 millions.

Tamil was the language of three ancient dynasties of whom we have record,—the Chola of Tanjore and Combaconum, who were settled

on or near the Cauvery and Colerun rivers, and who, as some suppose, gave their names to the Coromandel or Cholamandel coast; the Pandya, whose capital is now occupied by the inhabitants of Madura; and the Chera, who ruled at Kerala on the Malabar coast.

Tamil is now spoken throughout the vast plain of the Karnatic, or country below the Ghats. From Cape Comorin to Pulicat, 30 miles north of Madras, and inland from the Bay of Bengal to the Eastern Ghats, it skirts Mysore on all its eastern frontier, is also spoken in the Bara Mahal, Salem, and Combaconum, meeting with the Malealam at the great gap of Palghat. It is spoken also on the western side of the Ghats from Cape Comorin to the neighbourhood of Trivandrum; also in the northern and north-western parts of Ceylon, where Tamilar formed settlements prior to the Christian era, and from whence they have gradually thrust out the Singhalese. Mr. Taylor is of opinion that Tamil was cultivated in its purity in the ancient Pandiya kingdom.

Teling is the Andhra of Sanskrit writers, a name mentioned by the Greek geographers as that of a nation dwelling on or near the Ganges. Until lately, Europeans termed the people and their language Gentoo, from a Portuguese word signifying heathens or gentiles. In respect to antiquity of culture and glossarial copiousness, it ranks next to the Tamil in the list of Dravidian idioms, but it surpasses all of them in euphonic sweetness. Telugu extends from Chanda, where it meets the Mahratta, and from Ganjam and Chicacole, where it intermixes with Urya, along the coast to Pulicat on the marine lagoon 30 miles north of Madras, where it meets the Tamil. At Vizagapatam, which is 120 miles south of Ganjam, Telugu is the sole language spoken. On this line of coast two monarchies formerly existed, the Andhra and Kalinga; both, apparently, were enterprising races with a seafaring people, and it is doubtless from the name of the latter dynasty that the Burmese and Malays derive the appellation of Kling, by which they distinguish all people from India; and the Talien of the Delta of the Irawadi are supposed to have been Teling. The Kalinga dynasty appear to have gained great possessions to the westward, as, at the time of the Mahomedan conquest, Warangal, seventy miles N.E. from Hyderabad, was considered by them the capital of Telingana, including then the eastern part of the nawab of Hyderabad's dominions, all the modern districts of Ganjam, Nellore, and Cuddapah, and much of the lands north. The most westerly spot at which Telugu is spoken is the small town of Murkundah, about 30 miles west of Beder, and it reaches this by a wavy line running westerly from north of Madras, as far as the eastern boundary of Mysore, which it follows up to that of the Canarese country, thus including in its extent the Ceded Districts, Kurnool, the greater part of the Hyderabad Dominions, and portions of the Nagpur country and Gondwana. In ancient times it seems to have been spoken as far north as the mouths of the Ganges. This appears both from the geographical limits which the Greeks have assigned to the territory of the Andhra or northern Telugu dynasty, and from many of the names and places mentioned by Ptolemy up to that delta being found to be Telugu. The Telugu people are undoubtedly the most numerous branch of the Dravidian race, although the Tamil surpass them in enterprise and in that self-reliance which supports them in their emigrations. Including the Naik or Naidoo (Nayaka), Reddi, and other Telugu tribes settled in the Tamil country, who are chiefly the descendants of those soldiers of fortune by whom the Pandiya and Chola kingdoms were subverted, and who number not less than a million of souls, and including also the Telugu settlers in Mysore, and the Telugu inhabitants of the Nizam's territory and other Native States, the people who speak the Telugu language may be estimated to amount to at least fourteen millions. Tamil and Telugu roots are in the great majority the same; but peculiarities in inflection and dialectic changes have so modified the modern tongues that they differ from each other as much as Portuguese from Spanish, Irish from Welsh, Hebrew from Armaic, and Hindi from Bengali.

Canarese, properly the Kannadi or Karnataka tongue, is bordered by the Tamil and the Telugu on the east. It is spoken throughout the plateau of Mysore, and in the south-western districts of the Hyderabad territory as far north as the village of Murkundah, about 30 miles west of Beder. Also it is much spoken in the ancient Tuluva country on the Malabar coast, now long designated as Canara, a name which it acquired from having been subjected for centuries to the rule of Canarese princes. But, in Canara, the Malealam, the Konkani, and the Tuluva are also spoken, though less extensively than the Canarese. The Canarese writing characters differ slightly from the Telugu, from which it has been borrowed, but the characters used for Tamil, Malealam, and Telugu are quite distinct from each other. The ancient Canarese character, however, entirely differs from that of the modern Telugu, and the Canarese language differs even more widely from the Telugu than it does from the Tamil. There is an ancient dialect of the Canarese language current, as well as modern, the latter differing from the former by the use of different inflexional terminations. The ancient Canarese dialect, however, has no connection with the Sanskrit character to which that name has been given, in which, viz. the Hala Kannada, many very ancient inscriptions in the Mahratta country as well as Mysore are found. The Imperial Gazetteer gives nine millions as the number speaking Canarese, but this number seems to be excessive. In the Hyderabad country, Canarese, Mahrati, and Telugu are spoken. The Urdu or Hindustani language used there is merely known as a *lingua franca* to the Mahomedans, to the Hindus and Kayasths from Northern India, and to the resident population.

The *Coorg* or *Kodaga* language is spoken in the small principality of this name, lying on the Western Ghats, and has hitherto been regarded as Canarese, modified by the Tulu. But Mr. Moëgling states that it is more nearly allied to the Tamil and Malealam than to the Canarese.

Malealam or *Malearma* is spoken along the Malabar coast on the western side of the Ghats or Malealam mountains, from Cape Comorin to the Chandagiri river, or, more strictly, perhaps to Nileshwar (Nileswara), where a Nair raja, conquered by Hyder, formerly ruled; from the vicinity of Mangalore, where it supersedes the Canarese and the Tulu, to Trivandrum, where it begins to be

superseded by the Tamil. The people speaking it in the states of Travancore and Cochin, and in the provinces of Malabar and Canara, were estimated by Dr. Caldwell at two and a half millions. The language, however, on the Malabar coast is rapidly being driven out by the Tamil. The people who speak it are, of all the Dravidian races, the most exclusive and superstitious, and shrink with most sensitiveness from contact with foreigners, though their coast, more than any part of India, has been in all ages visited by the traders of other lands,—by Phœnicians, Greeks, Jews, Syrian Christians, and Arabs, and the three last even formed permanent settlements amongst them. They shrink even from their own people, retreating from the great roads, cities, and bazars as eagerly as the Tamil flocks to them; and the Malealam-speaking race are to be found isolated with their families in their high-walled parambu, even in parts where the lines and centres of communication are entirely occupied by the more enterprising Tamil people, whose language, too, seems gradually pushing the Maleala aside. Their retired character has led to the less scrupulous and more adroit Tamilar occupying all the lines of communication, and monopolizing the greater part of the public business and commerce of the Malabar states. In a short time, perhaps, the Malealam will only be known in the hilly tracts or jungle fastnesses. Malealam was separated from the Tamil before the latter was cultivated and refined, and from Brahmanical influence has since had an infusion of Sanskrit words more than in any other Dravidian language, the fewest of such being in the Tamil.

Tulu or *Tuluva* is the last of the cultivated Dravidian tongues. It is an idiom which holds a position midway between the Canarese and the Malealam, but more nearly resembling the Canarese. Though once generally prevalent in the district of Canara, it is now spoken only in a small tract of country in the vicinity of Mangalore, by not more than 100,000 or 150,000 souls. It has been encroached upon by many languages, and is likely soon to disappear. The Tuluva has a strong resemblance to Maleala, though the Tuluva-speaking races are unable to understand their Malealam neighbours.

The *Toda*, properly the *Tuda* or *Tudava*, language is that spoken by the Tudavar, a primitive tribe on the Neilgherry Hills, believed to be the aboriginal inhabitants. They do not at present number more than from 300 to 500 souls. It is supposed that they never could have exceeded a few thousands; but they have diminished through opium-eating and polyandry, and at a former period the prevalence among them of female infanticide. The Toda is the oldest indigenous speech on the hills.

The *Kota* is the language of the Kotar, a small tribe of helot craftsmen inhabiting the Neilgherry Hills, and numbering about 1000 souls. It is a very old and rude dialect of Canarese, and their ancestors on the hills are supposed by Dr. Caldwell to have been at some ancient time a low-caste tribe who had fled thither to escape persecution. They are exceedingly filthy in their habits, are addicted beyond all other low-caste tribes to the eating of carrion, and have been generally shunned by Europeans.

Badaga or *Budagar* speak an ancient but organized dialect of the Canarese. They are immigrants from the north, and are the most numerous class of the inhabitants of the Neilgherry Hills.

The *Irular*, people of 'ignorance or darkness,' speak a rude Tamil.

The *Curh*, or *Curubar*, or *Kurumbar*, are nomade shepherds, who occupy the denser, deeper jungle, where they are occasionally stumbled upon by adventurous sportsmen, and the smoke of whose fires may occasionally be seen rising from the lower gorges of the hills.

The *Gond* is the language of the indigenous inhabitants of the northern parts of the extensive hilly country of Gondwana, of the northern portion of Berar, and which includes the greater part of the Central Provinces. Mr. Driberg compiled a very complete grammar and vocabulary of the Mahadeo dialect of the Gond language; and the dialect of the Saonee Gonds was noticed in a paper by Mr. Manger. The Uraon and the Male or Rajmahali dialects are close to the Gond and South Dravidian.

Khand is the language of a primitive race, who are supposed to be allied to the Gond. They inhabit the upper parts of Gondwana, Gumsur, and the hilly ranges of Orissa, and their horrid rites of offering young people in sacrifice (see Meriah) is generally known. The two people by whom the Gond and Ku languages are spoken are supposed to amount to 500,000 souls. 30,000,000 of Dravidians are British subjects, and the remainder are under the Native States of Mysore, Hyderabad, Travancore, and Cochin, and in this enumeration there has not been included the idioms of the Ramusi, the Yerkala, the Korawar, the Binjara, the Beder, the Male-Arisar, and other wandering, predatory, or forest tribes. The Binjara speak a dialect of the Hindi; the Ramusi, and the majority of the Korawa, a patois of the Telugu. The tribes inhabiting the hills and forests speak corrupted dialects of the languages of the contiguous plains. The Male-Arisar, 'hill kings,' the hill tribes inhabiting the Southern Ghats, speak corrupt Malealam in the northern part of the range, where the Malealam is the prevailing language, and corrupt Tamil in the southern, in the vicinity of Tamil-speaking districts.

Kol and Saora dwell towards the north of the Gond and Khand, in Central India; their languages contain Dravidian words, but they belong to a totally different family of languages.

Uraon, the language of the Urya people, is an uncultivated idiom, and contains many roots and forms belonging to the Kol dialects, but so many Dravidian roots of primary importance, that it is considered by Dr. Caldwell as having originally been a member of the Dravidian family of languages.

The *Mal*, *Paharia*, or *Rajmahali*, contains so many Dravidian roots of primary importance, though it also contains a large admixture of roots and forms belonging to the Kol dialects, that Dr. Caldwell considers it also had originally belonged to the Dravidian family of languages. It is spoken by the Malei, or inhabitants of the hills. A brief vocabulary of the words of the tribe inhabiting the Rajmahal Hills, in Central India, as contained in vol. v. of the Asiatic Researches, and Mr. Hodgson's more complete collections, prove the idiom of this tribe to be in the main Dravidian.

The *Brahui* language, spoken by the mountaineers in the khanship of Kelat in Baluchistan, contains some Dravidian words, and a considerable infusion of unquestionable Dravidian forms and idioms. Considered as a whole, this language is supposed to be derived from the same source as the Panjabi and Sindi; but it unquestionably contains a Dravidian element, derived from a remnant of the ancient Dravidian race having been incorporated with the Brahui. The discovery of this element beyond the Indus has been thought to prove that some of the Dravidians, like the Aryans, the Græco-Scythians, and the Turco-Mongolians, entered India by the north-west route. The Brahui language extends from Shawl in the north to Jhalawan in the south, and from Kohak in the west to Harrand in the east.—*Professor Huxley in Jo. Eth. So.; Bunsen in Rep. Brit. Assoc.; The Rev. Dr. Caldwell's Comparative Grammar; Sir Erskine Perry's Bird's-eye View.*

DREAMS.

Songe, Réve, ... Fr.	Sogno, ... It.
Traum, ... Ger.	Sueno, ... Sp.
Khab, Nazr, Manām, Pers.	Roga, Dush, . . Turk.

Dreams are to a great extent still trusted to in Eastern countries. Their earliest remarkable dreams related, were those to Abraham, of the captivity, and at Bethel, of the ladder (Genesis xxviii. 12). Subsequently were Joseph's dreams and those of Pharaoh (Genesis xl. 5, xli. 1), Gideon, and Saul (1 Samuel xxviii. 6). Belief in dreams is intimately associated with the lower forms of religion. To the savage they have a reality and an importance which we can scarcely appreciate. During sleep the spirit seems to desert the body; and as in dreams we visit other localities and even other worlds, living as it were a separate and different life, the two phenomena are not unnaturally regarded as the complements of one another. In Madagascar the people pay a religious regard to dreams, and imagine that their good demons or inferior deities tell them in their dreams what ought to be done, or warn them of what ought to be avoided.

Throughout the Christian world and in Great Britain, as elsewhere, it was customary for young women on St. Agnes' eve to endeavour to divine who should be their husbands. This was called fasting St. Agnes' fast. They took a row of pins, pulling one out after another, saying a paternoster, and sticking one pin in the sleeve. Then, going to rest without food, their dreams were supposed to present the image of their future husbands. In Keat's poem, entitled the Eve of St. Agnes, the custom is thus alluded to :—

'They told her how, upon St. Agnes' eve,
Young virgins might have visions of delight,
And soft adorings from their loves receive,
Upon the honeyed middle of the night,
If ceremonies due they did aright,—
As, supperless to bed they must retire,
And couch supine their beauties lily-white,
Nor look behind, nor sideways, but require
Of Heaven with upward eyes for all that they desire.'

DREDGING. In this process, note the numbers of species, the kinds usually found associating together, the number of living specimens of each, the number of dead, the average age of the specimens, whether young or adult. The general state of the animals, and particularly as to the maturity of the eggs, or if they have been recently shed. The kind of ground. The depth; the distance from land. The zone, whether the littoral zone, the space between high and low water marks; the laminarian zone, or that in which the large tangles or sea-weeds flourish, and extends from low-water mark to a depth of about 15 fathoms; the coralline zone extends from the depth of 15 to 50 fathoms; sea-weeds are scarce, but corallines abound in this region; the coral zone is that in which deep-sea corals are found, and where the depth is beyond 50 fathoms. Any particular currents. What are the mollusca found between tide-marks on the neighbouring coast? Is mud present, and if present, of what kind? Are any dead shells common, of which no living examples occur? What sea-weeds are found? Do the different specimens of the same species vary much in size, form, or colour?—*Edin. N. Phil. Journ.* pp. 205, 207, July 1856.

DREN. Hind. An inflated buffalo skin, used by swimmers in torrents.

DREPANA. Several caterpillars, the Aloa lactinea, the Orgyia Ceylanica, Euproctis virguncula, the Trichia exigua, the Narosa conspersa, the Limacodes graciosa, and a species of Drepana, are found on the coffee trees, but they do not cause much injury. Another caterpillar, however, though fortunately not abundant, the Zeuzera coffeæ, destroys many trees, both young and old, by eating out the heart. It resembles the caterpillar of the goat-moth of England, and is as thick as a goose quill. It generally enters the tree 6 or 12 inches from the ground, eating upwards. The sickly drooping of the tree marks its presence.

DREPANOGNATHUS SALTATOR. *Jerdon.* An ant which moves by jumps of several inches.

DRES. Anglo-Hind. Corrupted from English. Dress-piece; figured muslin of all kinds.

DRESHUK. In front of the Gurchani and Lishari hills, and between Harrand and Mithunkote, are plains inhabited by the Dreshuk.

DRILL. In Bundelkhand the drill-sowing is called bob, jaiya in Dehli, and wuer in Rohilkhand and the Doab. In some parts of N. India the drill is attached to the plough, in other districts it is a detached instrument. Bansa or orna, Hind., is the channel down which the seed descends. The mouth into which the seed is cast is called daura or mala, also weira in N. India. The drill of Cuddapah is of bamboo. It is a small wooden hopper, perforated with holes, which communicate with bamboo tubes below, into which the seed is fed by the hand. The seed, passing down through the bamboo tubes which radiate from the hopper, is deposited in the soil by a number of similar perpendicular tubes which are fixed in a beam of wood which receives the lower ends of the bamboos, which communicate with the hopper. The whole is very effective.

DRIMYCARPUS RACEMOSUS. *Hook. fils.* A timber tree of Chittagong.

DROGUE AMERE. Fr. A compound of mastic, frankincense, myrrh, aloes, and kreat.

DROK or Brog are Bhot occupants of the central part of Northern Tibet. Mr. Hodgson supposes them a mixed race, joined together for predatory purposes.

DROMAIUS, a genus of birds belonging to the order Cursores or runners, fam. Casuaridæ, Casuarius galeatus, and C. Bennettii, Dromaius Novæ Hollandiæ, and fam. Struthionidæ, Struthio camelus.

Casuarius Bennettii, *Gould*, is the cassowary of the island of New Britain, near to New Guinea, where it was called Mooruk. The height of the bird is 3 feet to the top of the back, and 5 feet when standing erect. Its colour is rufous mixed with black on the back and hinder portions of the body, and raven black about the neck and breast. The loose wavy skin of the neck is beautifully coloured with iridescent tints of bluish purple, pink, and an occasional shady green, quite different from the red and purple caruncles of the Casuarius galeatus. The feet and legs, which are very large and strong, are of a pale ash colour. This bird also differs from the C. galeatus in having a horny plate instead of a helmet-like protuberance on the top of the head; which callous plate has the character of and resembles mother-of-pearl darkened with black-lead. The form of the bill differs considerably from that of the emu, Dromaius Novæ Hollandiæ, being narrower, larger, and more curved, and in having a black or leathery case at the base. Behind the plate of the head is a small tuft of black hair-like feathers, which are continued in greater or lesser abundance over most parts of the neck. The egg is about the same size as that of the emu, and is of a dirty pale yellowish-green colour. It utters a peculiar chirping, whistling sound, but also a loud one resembling that of the word Moork. Casuarius galeatus, the helmeted cassowary of Ceram only, is so called from the horny helmet which surmounts the head. Its rudimentary wings consist of five long bristles like blunt porcupine quills. It runs swiftly with a bounding motion. It feeds on fruits, birds' eggs, insects, crustacea, and tender herbage. It is a stout and strong bird, standing 5 or 6 feet high, and covered with long, coarse black hair-like feathers. The head has a large horny casque or helmet, with bright blue and red colours on the bare skin of the neck. These birds wander about in the vast mountain forests that cover the island of Ceram. The female lays three to five large and beautifully shagreened green eggs, on a bed of leaves. The male and female sit alternately on the eggs for about a month.

The Dromaius Novæ Hollandiæ rises to a height of 7 feet. It lives on fruits, eggs, and small animals.—*Crawfurd's Dictionary*, p. 84; *London Athenæum*, No. 1512, 12th Dec. 1857, p. 1551; *Wallace*, ii.; *Dr. Bennett in a Letter*, dated Sydney, 10th Sept. 1857.

DROMEDARY, Camelus dromedarius, *Linn.*

DRONA, son of the rishi Bharadwaja. He was a Brahman, but he had been taught military science by Parasurama. His offers of service were unceremoniously rejected by raja Drupada, on which he visited Hastinapura, where he was appointed teacher of the five Pandu and the hundred Kuru princes. He instructed them to rein the steed, to guide the elephant, to drive the chariot, launch the javelin, hurl the dart, wield the battle-axe, and whirl the mace. He took an active share in the battle of Kuru Kshetra; on the death of Bhishma, took the command of the Kuru forces; on the fourth day he killed Virata and king Drupada, but was subsequently unfairly slain by Dhrishta-dyumna, who had sworn to revenge his father's death. The son of Drona is a celebrated hero in the Mahabharata, named Aswatthama.—*Garrett.*

DROSERA, a genus of the natural family Droseraceæ, or sun-dew tribe of plants. D. Burmanni, *Vahl*, Mo-dwen-thæ of the Burmese, grows in Ceylon, the Peninsula, Bengal, Sylhet, and Burma. There are two different species at Tavoy. D. peltata (Drosera lunata, *Ham.*) grows in the Neilgherry and Baba Booden Hills. The leaves stain paper red. They are applied as a blister to the skin. They close upon flies which light upon them.—*Mason; Voigt; Roxb.* ii. 113.

DROUGHTS are frequent in tropical Asia. They are alluded to in Genesis xxxi. 40, 'In the day the drought consumed me, and the frost by night, and my sleep departed from my eyes.' The following droughts are generally known:—

B.C. 138, The whole world.
A.D. 767, Asia.
,, 1291, Great drought in India.
,, 1412–3, ,, the Ganges, Jumna, Doab.
,, 1661, ,, Panjab.
,, 1682–3, ,, Sind.
,, 1683–4, ,, N.W. Provinces.
,, 1690, ,, Baroda.
,, 1803–4, Failure of rain in Allahabad.
,, 1824, Drought in Dehli.
,, 1832–3, ,, N.W. Provinces.
,, 1837–8, ,, N.W. Provinces.
,, 1860–1, ,, N.W. Provinces and Peninsula.
,, 1866, Severe in Orissa and parts of Madras.
,, 1873, ,, Behar and parts of N. Bengal.
,, 1877, ,, Madras, Mysore, and parts of Bombay.

DRUG is a hill fort, or any hill, and is a vernacular change from the Sanskrit word Durga. Chittle-drug in Mysore, Raman-drug in the Bellary district, Chimdergooty-drug in lat. 14° 27′ N.

DRUGS. Dawa of the Arabs, and Marndu of the Dravidian races. Amongst the physicians of the east and south of Asia, as in Europe until recent times, almost every substance possessing any peculiarity of colour, shape, smell, or taste, is believed to have some medicinal virtue. Much reliance is placed by them on the doctrine of the signatures, *i.e.* the belief that a substance which has some of the physical characters of an organ, or of the symptoms of a disease, will have power over what it resembles. Some substances (chiefly animal, however) are considered to have medicinal virtues merely from their oddity,—for example, pikhal mūs, rat's drug, the gall-bladder of the brown bear, the hairs of a tiger's whisker, etc. Difficulty of acquisition would also appear to add virtue. Thus it frequently happens that of two kinds of a drug, the one which is more rare is considered much the more powerful,—in some cases, indeed, when neither would appear to have any special virtue. The hakīm of India has curious beliefs as to the plants which produce some of the foreign vegetable drugs, and still more curious theories are held as to the source of some of those of mineral origin. Thus Zahr-mohra, which comprise several mineral substances given medicinally, is believed by them to be formed by the spittle of the Mar-khor (Capra megaceros) falling on stones in the Kohistan, west of the Indus. The great number of substances to which, by natives and in their books on medicine, aphrodisiac virtues are attributed, is remarkable, some in connection with the doctrine of signatures, but most of them probably quite destitute of the qualities assigned to them. Drugs of Cachar and Tibet hold a high reputation in Northern India.—*Powell's Handbook.*

DRUHYU, in Hindu legend, one of the sons of Yagati, one of the old fathers of mankind. Anu

was the founder of one of the five great Turanian tribes, the Yadu, Turvasa, Druhyu, and Anu.

DRUIDICAL REMAINS. The cromlech or trilithic altar in the centre of all Druidic monuments, is supposed by Tod to be a torun or triumphal arch, sacred to the sun-god Belenus. There are numerous Indo-Scythic remains in the Nizam's territory and near Bustar. See Cairn; Cromlech; Dolmen; Menhir.

DRUM.

Tambour, Caisse, . FR.	Tamburo, ... IT.
Trommel, Pauke, . GER.	Tambor, ... SP.
Dhol, Tabl. Tambur, HIND.	Tranpeta, Dawul, TURK.

The drum is used by Asiatic nations as a musical instrument in war, and in lieu of a bell. The institution of the drum was adopted by a late king of Siam, according to Pallegoix, but the pages who had to answer it succeeded in extinguishing the practice. A curious Chinese drawing engraved in Chine ancienne (l'Univers Pittoresque), pl. 3, represents this institution of the drum. A drum was suspended at the gate of the emperor of China, which supplicants sounded. The custom is a genuine Chinese one, and the summons seems to have been by a drum rather than by a bell. Thus in the romance of The Fortunate Union, the hero Teichun-gyu exclaims, 'My lord, you are mistaken. The emperor himself suspends the drum at his palace gate, and admits all to state their hardships without reserve.'—*Yule, Cathay*, i. c. vi.; *Davis' Chinese Miscellanies*, p. 109.

DRUM-FISH, a sea-fish near the Pearl River at Macao. Every evening they assemble around a ship, and continue their musical humming till about midnight. The noise rises and falls, or suddenly ceases at times, as they quit the ship in search of food. The drumming of fish or molluscs is said to be heard also in the seas near Bombay, also in the Carolina seas.—*Adams*, p. 63.

DRUMMOND, LIEUT.-COL., an officer of the Bengal army who wrote on the mines and mineral resources of Northern Afghanistan, on the copper mines of Kamaon, on the natural resources of Almorah, in Extracts from Public Papers, N.W. Provinces, Bombay Telegraph and Courier, Oct. 24 and Nov. 19, 1849, and Mofussilite, Nov. 10, 1849.—*Dr. Buist's Catalogue.*

DRUN, also Pua. TIB. The Tibetan name of the red marmot of the western mid-Himalayas; Arctomys hemachalanus, *Hodgson*. It is confined to certain situations at high altitudes, and prefers fertile and secluded valleys, where vegetation returns rapidly and is luxuriant. There it spends the summer months, until again forced to its burrow by the cold and snow of winter. Their excavations are formed on gentle slopes or under stones and rocks, where they delight to sit erect and scream. Often the burrows are scattered over the valley, where loud wailing cries may be heard for miles along the mountain-sides. It is seldom they wander for any distance from their habitations, and usually take up a position close to the entrances, darting thereinto on the approach of danger. They frequently leap during progression, at times using their tails to assist them The hibernation lasts from four to five months. or even longer when the snow lies for any length ened period.—*Adams.*

DRUNKENNESS.

Ivrognerie, . . . FR.	Trunkenheit, . . GER
Ivresse, ... ,,	Nasha, Sukr, . . HIND

In India the inebriating substances used are opium, preparations of hemp, distilled spirits, and the fermented juices of the palm trees. In moderation these substances are beneficial, and all nations use them, though the mode of their action on the human frame is not understood; but most of them must be regarded as valuable in wearying mental or bodily exertions,—they evidently supply some want in the system. In some individuals drunkenness is a hereditary disease equivalent to a mania, and these cases are generally given up by the medical faculty in despair.

Although Hindus and Mahomedans and Buddhists are by their religions or by social usage prohibited the use of alcoholic fluids, they do use them largely, either stealthily or openly, the fermented palm wines, or the distilled arracks or spirits, being in great demand. In ancient times the conquering Aryans seem to have largely used some alcoholic fluid, because the excitement described from drinking their soma juice could not have resulted from other cause. Out of 500,000 persons who took the pledge in America, 350,000 broke it, proving that a moderate use of alcohol is proper for man; the experience of the hydropathic establishments shows an enormous increase in the use of food. If we only drink water, our consumption of farinaceous and animal food must be very largely extended. The effect of alcohol is to arrest the destruction of the tissues, and to utilize the constituents of life; and therefore, under the present conditions of modern life, where the nervous system is liable to so much waste, alcoholic substances, as the most portable form of accessory diet, are more than ever necessary. If, as is the case in infancy, the only purpose of life were to live, the complementary diets of animal, farinaceous, and leguminous food would be sufficient to sustain life; but so soon as man begins to work and think, alcohol, as preventing and arresting the destruction of tissue, is the cheapest food. If a man have a shilling to spend on food, he will do a better day's work on nine pennyworth of bread and meat and three pennyworth of beer, than on six pennyworth of bread, six pennyworth of meat, and sufficiency of water. Another important fact is, that total abstinence from stimulating drink actually predisposes to certain diseases.

DRUPADA, king of the Panchala, was son of Prishata and father of Draupadi. Defeated by Drona, his kingdom was restricted to the boundary of the Chambal and the Ganges. He took part with the Pandava in the battle of Kuru Kshetra, but was killed by Drona on the fourth day of the engagement. He was schoolfellow of Drona, and father of Dhrishta-dyumna and of Draupadi. —*Garrett.*

DRURY, HEBER, an officer of the Madras army, author of Useful Plants of India, London 1873, a work of much value; also of Handbook of the Indian Flora.

DRUSE, a race occupying the range of hills which extend parallel to the coast from the neighbourhood of Beyrout to the heights above Sidon. They are brave, honest, and hospitable. They number 70,000. Min kadim (*ab origine*) is the general answer given to all inquiries as to their settling there; they are likewise spread over the Hauran to the S.E. of Damascus. Zahle, seven hours from Balbec, belongs to their territory. Half an hour from Zahle, on the south side of the

village of Kerak, is shown the tomb of Noah. They trace their cult to Al Hakim, a khalif of Egypt. They believe in the transmigration of souls, and that the prophets recorded in the Old Testament were only a succession of identical spirits. The names of David, Abraham, Ishmael, and Pythagoras occur in their sacred code, but without any adherence to ascertained chronology. Hamsa, their God and sovereign, they consider to have been the true Christ; and Jesus, son of Joseph, a travelling impostor, and therefore deservedly crucified. They seem equally opposed to Mahomedans and Christians, but use the Koran to deceive their Turkish masters. They consider the four evangelists to have been so many powers or parts of religion, and Hamsa to have appeared about 400 years after Mahomed, when he flourished eight years upon earth, and afterwards appeared seven times in all from the time of Adam, finally and formidably to reappear when the Christians shall be more powerful than the Turks; he will then spread the religion of the Druses by divine authority. Their creed requires implicit obedience, and rejects fasting, prayers, tithes, and killing of animals. In mode of life, form of government, language, and customs, they resemble the Maronites. Druse women wear the tantour, a conical tube, about 18 inches long, of silver or plated copper, and ornamented with a variety of patterns. It is fixed upon a cushion fastened to the top of the forehead, and inclines slightly forward, like a horn. Over this a piece of white muslin is thrown, which falls down to the hips, and serves to envelope their faces at pleasure when they go abroad. In some parts of the mountain it is worn on the side of the head. Their religion seems a remnant of some Mahomedan heresy. They arrange themselves as the Akal or intelligent, and that of the Jahil or ignorant. The Akal, in number about ten thousand, form the sacred order, and are distinguishable by their white turbans. The Akal are not permitted to smoke tobacco; they never swear, and are very reserved in their manners and conversation, but are allowed to marry. The chief of the order resides in a village called El-Mutna. The Jahil, or uninitiated, perform no religious rite whatever, unless, to assume the appearance of Mahomedans, they enter the mosques and recite their prayers with Turks. Schools are pretty frequent among the Druses. The Akal are generally the masters, and are paid by their pupils. They teach reading and writing. — *Robinson's Travels*, ii. pp. 9 to 322; *Catafago*.

DRYADS. See Fountains; Rivers; Springs.

DRYANDRA CORDIFOLIA, *Thun.*, the Woo-thoong-shoo or Tung-eu of the Chinese, is a plant valuable on account of its oil-seeds, much in use in China. It is one of the favourite trees of the Chinese, prized for its beauty and the hard wood it furnishes.— *Williams' Middle Kingdom*, p. 281; *Fortune's Tea Districts*, p. 119.

DRYIOPHIDÆ, the white snake family of reptiles, containing—

Tropidococcyx perroteti, *D. and B.*, North Canara.
Tragops prasinus, *Reinw.*, Eastern India.
T. dispar, *Gthr.*, Animallay mountains.
T. fronticinctus, *Gthr.*
Passerita mycterizans, *L.*, Ceylon, Peninsula of India.
P. purpurascens, *Gthr.*, Ceylon.

DRYOBALANOPS CAMPHORA, *Cole.*, the Shorea camphorifera, *Roxb.*, is a very large tree, a native of Borneo and Sumatra, where it sometimes attains 6 to 8 feet in diameter, and 120 feet high. In the cavities of the trunk there occur collections of solid camphor, and of a light fluid called camphor oil. The solid camphor is highly prized by the Chinese and Japanese, and rarely finds its way to Europe. The tree is said to be common in Sumatra, in the country of the Battas, but not to be found to the south of the line. In Borneo it was found at first towards the north, was particularly abundant in the country of the Kyans in the interior, on the Bintulu and Rejang rivers, and has since been discovered in Sarawak. In Labuan it is common, and is one of the noblest of the trees in that fine jungle. Not one in ten trees is found to produce camphor, and the camphor collectors cut notches in the trees, in order, before felling, to ascertain whether they are likely to find camphor. The younger and smaller trees are often quite as prolific as the older and larger trees. The camphor is found in a concrete state in the crevices of the wood, so that it can only be extracted by felling the tree, which is afterwards cut into blocks and split into wedges, and the camphor, which is white and transparent, is then taken out. The essential oil, found in hollows in the wood, the natives crystallize artificially, but the camphor thus obtained is not so much esteemed as that found naturally crystallized. The high price of the concrete camphor depends wholly on its scarcity, and the fancy of the Chinese and Japanese, who ascribe high medicinal virtues to it, which it probably possesses in no higher degree than the cheap article which they themselves obtain by the distillation of the wood of the Camphora officinalis, and which may be had in the same markets for about one-hundredth part of the price. After a stay in the woods, frequently of three months, during which they may fell a hundred trees, a party of 30 persons rarely bring away more than 15 or 20 pounds of solid camphor, worth from 200 to 250 dollars. The camphor of D. camphora is in white crystalline fragments; sp. gr. 1·009. Its odour is not of so diffusable a nature, otherwise it closely resembles the camphor from the Camphora officinarum. The wood of this camphor tree is good timber, suited for house and ship building. The liquid camphor of the same tree appears of the nature of camphogen. Dr. A. T. Thompson, by passing a current of oxygen gas through it, converted it into camphor.—*As. Researches*, xii. p. 535; *Low's Sarawak*, p. 44; *Marsden's Sumatra*, p. 150; *Royle's Mat. Med.* p. 536; *Crawfurd's Dictionary*, p. 81; *Simmonds' Commercial Products; O'Sh. Bengal Disp.; Mason's Tenasserim; Tomlinson*, p. 287; *Indian Agriculturist*.

DRY ROT is a disease affecting timber, produced by the attacks of fungi. The first sign of it consists in the appearance of small white points, from which a filamentous substance radiates parallel with the surface of the timber. This is the first stage of growth of the spores of the fungus, and the filamentous matter is their thallus or spawn. As the thallus gathers strength, it insinuates its filaments into any crevice of the wood, and they, being of excessive fineness, readily pass down and between the tubes from which the wood is organized, forcing them asunder, and completely destroying the cohesion

of the tissue. When the thalli of many fungi interlace, the radiating appearance can no longer be remarked; but a thick, tough, leathery white stratum is formed wherever there is room for its development, and from this a fresh supply of the destructive filamentous thallus is emitted with such constantly increasing rapidity and force, that the total ruin of timber speedily ensues where circumstances are favourable for the growth of the fungi. Dry rot consists of the thallus of Merulius lacrymans, or Polyporus destructor, two highly-organized fungi; but any of the fungi that are commonly found upon decaying trees in woods are capable of producing dry rot, and the most rapidly-spreading and dangerous kinds is caused by the ravages of different species of Sporotrichum. The latter throw up from their thallus whole forests of microscopic branches loaded with reproductive spores, of such excessive smallness that they may insinuate themselves into the most minute crevices or flaws even in the sides of the tubes of which timber consists, and they are infinitely more dangerous than merulii or polypori, which seldom fructify. The circumstances that are most favourable to the development of the dry rot fungi are damp, unventilated situations, and a subacid state of the wood. The latter condition, especially in oak, is easily produced by a slight fermentation of the sap which remains in the timber, especially if the latter has not been well seasoned before being employed. It has been proved experimentally that fluids which, in their ordinary state, will not produce fungi, generate them abundantly if ever so slightly acidulated. Dutrochet found that distilled water, holding in solution a small quantity of the white of egg, will not generate fungi in a twelvemonth; but upon the addition of the minutest quantity of nitric, sulphuric, muriatic, phosphoric, oxalic, or acetic acid, it generated them in eight days' time in abundance. Alkalescent infusions possess the same property. The only poisons which will prevent the appearance of fungi are the oxides or salts of mercury. A solution of fish-glue yields fungi rapidly and in great abundance; but a small quantity of red precipitate or corrosive sublimate destroys this power entirely. It is, moreover, an important fact that no other mineral preparation has any such properties. Dutrochet ascertained that other metallic oxides acted differently. Oxides of lead and tin hastened the development of fungi; those of iron, antimony, and zinc were inert; and oxides of copper, nickel, and cobalt, although they retarded the appearance of fungi, yet did not prevent their growth in the end. These facts are confirmed by the experience of the use of Kyan's process for preparing timber, which consists in submitting the wood to the action of corrosive sublimate. Immersing the wood in chloride of zinc likewise prevents the attacks of fungi, and also submitting it to the action of the vapour of creosote. Dry rot also occurs in animals. Specimens of hymenopterous insects resembling wasps have been brought from the West Indies, with a fungus allied to Sphœria militaris growing from between their anterior coxæ, and it is positively asserted by travellers that the insects fly about while burdened with the plant. Upon opening the bodies of the wasps, they are found filled with the thallus of the fungus up to the orbits of the eyes and the points of the tarsi, the whole of the intestines being obliterated. In such cases it is to be supposed that the thallus of the sphœria first kills the wasp by compressing and drying up the body, and then, continuing to grow, occupies the whole of the cavity of the shell of the insect. A more common instance of animal dry rot is the disease in silk-worms called La Muscadine. Silk-worms of all ages are occasionally liable to become sickly and to die, soon after death becoming stiff, and acquiring such a degree of firmness as to be readily broken. They then throw out from their surface a sort of white efflorescence, which is the fructification of the fungus called Botrytis bassiana, their inside being filled by the thallus of the same plant. If some healthy caterpillars are placed beneath a bell-glass, along with a small portion of worm killed by the botrytis, they soon catch the disease, exhibit the same symptoms as those already mentioned, and eventually perish, having no doubt been infected either by rubbing themselves against the dead worm, or, which is more probable, having received upon their skins the infinitely minute seeds dispersed by the botrytis. If healthy crysalids are inoculated by the introduction below their shell of a little of the botrytis matter upon the point of a needle, they also sicken and die. In these cases effects are produced upon insects similar to those upon timber; that is to say, vitality in the one case, and cohesion in the other, is destroyed by the growth of the thallus of certain fungi, which spread with great and irresistible rapidity, and fructify where occasion offers. Boletus destructor is also one of the dry rot fungi.—*Eng. Cyc.; Toml.*

DSO and Dso-mo. TIBETAN. The bull and cow, produce of the male yak and common cow.

DUA. ARAB. Supplication, prayer. Dua-i-Masura, supplication for the remission of sins. Dua-i-Qunut, a prayer of praise.

DUABANGA GRANDIFLORA. *Wall.* Myoukgnau. BURM. A tree of British Burma; wood used in house-building. A cubic foot weighs 30 pounds. In a full-grown tree on good soil the average length of the trunk to the first branch is 80 feet, and average girth measured at 6 feet from the ground is 12 feet. It sells at 8 annas per cubic foot. D. sonneratioides, *Buch.*, is a timber tree of Darjiling Terai, Chittagong, Goalpara, Pegu.—*Cal. Cat. Ex.* 1862.

DUB. ARAB. Bear. Dub-i-Akbar, the Great Bear constellation.

DUBARA. BENG. A caste of fishermen in Bengal.

DUBBER, Dupper. HIND. Sidda, Siddo, TAM., TEL. Dubbers are bottles formed of skins, and used for holding and conveying spirits, oil, ghi, etc. They are made of all sizes, from a quart to 10 or 20 gallons, some to hold not a wine-glassful; one has been seen in Bijapur that was estimated at 200 gallons capacity; they are formed of untanned goat-skins by stretching them when wet over unburned hollow clay forms, the edges being well rubbed down on the lower skin to cause adhesion. The clay core is readily removed after the bottle is dried in the sun. They are manufactured in most parts of India. They are of nearly a globular form, roundish at the bottom, so as not to stand well. The aperture end is round like that of the bottom, but large in proportion to their size; the neck is short.—*Hindu Infanticide*, p. 177; *Rohde, MSS.; Faulkner.*

DUBBOYE, in Gujerat. Its chief is of the Bagela race. See Komarpal.

DUBDUBEA, a Nepal tree abounding in the Terai. Wood is a powerful astringent, and an article of trade.—*Smith's Five Years.*

DUBH. HIND. The grass Cynodon dactylon. Its dry, creeping stems spread out, and take root at the joints. It is commonly called khabal in the Panjab. This is the durba grass of Sanskrit authors, and in the Atharva Veda it is thus apostrophized: 'May Durba which rose from the water of life, which has a hundred roots and a hundred stems, efface a hundred of my sins, and prolong my existence on earth for a hundred years.' The flower of this grass is a most beautiful object under the microscope. There are, however, three sorts of dubh recognised in the north of India. The best, called Paunda, is especially the same as Fiorin; the second, called Khutia, is smaller, and grows on hard ground; the third is of two white sorts, called Ghor-dubh, for horse fodder, and Ban-dubh, a coarser kind.—*Powell.*

DUBLO. MAHR. Dubaro, GUJ. A clan of the Bhil in the inland tracts of Surat and Broach. They are usually the vartania or village watchmen.

DUBOIS, ABBE J. A., a French missionary in Mysore and in the south of India. He wrote an account of Hindu Ordeals in Mad. Lit. Trans., 1827; On the State of Christianity in India, Lond. 1823; also a Description of the Character, Manners, and Customs of the People of India, and their Institutions, Religious and Civil, Lond. 1817.

DUBTHA. HIND. A bundle of peeled sugar-canes ready for the press.

DUCK.

Canard, ... FR.	Anitra, ... IT.
Ente, Schätzchen, GER.	Anade, ... SP.
Battah, ... HIND.	Urdek, ... TURK.

The domesticated duck is a descendant from the common wild duck, the Anas boschas. Its domestication has been accomplished in comparatively recent times, for it was unknown to the Egyptians, to the Jews of the Old Testament, or to the Greeks of the Homeric period. About eighteen centuries ago, Columella and Varro speak of the necessity of keeping ducks in netted enclosures, like other wild fowl, so, even then, there was danger of them flying away. The A. boschas is met with in all the northern parts of Asia, Europe, and America. The domestic duck is polygamous. Young ducks are injured by being allowed to swim in water. The domestic breeds are the Common duck, the Flat-billed, Call and Penguin duck, Arlesbury, Tufted, Hook-bill, and Labrador duck; but though breeding in remote southern latitudes, where the mallard is unknown, the domestic breed always shows parts of the wild. Certain ducks breed on cliffs or trees, and they must carry their young to the water, though this has not been observed. A large red duck is the emblem of fidelity with the Rajputs.

Tadorna vulpanser, the Common Shieldrake of Europe, Asia, N. Africa; is common in the Panjab, not rare in Lower Bengal.
T. tadornoides, Australian Shieldrake, S. Australia.
T. variegata, Paradise Shieldrake, New Zealand.
Aix galericulata, Mandarin Duck, China.
Casarca rutila, Ruddy Shieldrake, N. Africa and S. Asia.
Dendrocygna arcuata, Whistling Duck, Java.
Spatula clypeata, or Anas clypeata, the Shoveller, northern regions, N. Africa; tolerably common in India.
Anas strepera, the Gadwall, the northern regions and Barbary; tolerably common in India.
A. acuta, the Pintail Duck, northern regions and Barbary, and is very common in India.
A. boschas, the Mallard, the northern regions and Barbary; in India, is confined to Sind, Panjab, and the Himalaya and its vicinity, replaced southward by A. pœcilorhyncha.
A. crecca, Querguedula crecca, Teal of Europe, Asia, Barbary; common in India.
A. penelope, Mareca penelope, Widgeon of Europe, Asia, N. Africa; common in India.
A. pœcilorhyncha, the Spotted-billed Duck.
Aythya ferina, the Pochard of the northern regions and Barbary; common in India.
A. nyroca, White-eyed Duck of Europe, Asia, N. Africa; common in India.
Fuligula marila, Scaup Pochard of the northern regions; occurs in Panjab, Sind, Nepal.
F. cristata, Tufted Duck of Europe, Asia, Barbary; common in India.

Ducks are sacred to the worshippers in China of a canonized being, Hong-yuen-shuee. The ducks on the river at Canton are so trained, that, when feeding in the fields, on being summoned to return by the whistle of their owner, they all waddle hastily back. They are similarly trained on all China rivers. Flocks of ducks are herded there. The herdsmen live in small boats, and drive the ducks from place to place during the day, sending them home in the evening.—*Montgomery*, ii. p. 262; *Frere; Antipodes*, p. 248; *Darwin; Blyth; Jerdon.*

DUCK-WEED, Lemna gibba and other species of Lemnaceæ.

DUDAIEN, of Genesis xxx. 14, is the Mandragora officinalis.

DUDH. HIND. Milk. Hence Dudh ka Mahaena, the tenth month, literally the milk month. Dudh-Payra, sweetmeats.

DUDHI TUPPAS, forming the S.E. portion of the Mirzapore district, are in a hilly tract of considerable size, which, owing to a variety of circumstances, escaped assessment when the rest of the Benares province was regularly settled. The great bulk of the cultivators and village managers belong to the aboriginal tribes, and are a simple, ignorant people, easily overreached by astute and grasping money-lenders. The people in general are truthful, willing to labour, possess great physical courage, and exhibit much enterprise. The Sueri, however, are addicted to theft; they coin false money, and live principally by jugglery. They procure wives for their young men by kidnapping girls. Their women wear a tartan dress, often have a horn projecting from the forehead as an ornament, and are fond of intoxicating drinks. The Bhuiya are daring mountaineers. Their courtships are managed by the father of a marriageable lad searching round the neighbouring villages for a daughter-in-law, not related within the prohibited degrees of consanguinity. Having at last chosen one, he returns home, and in a few days again visits the bride's house with his son, and not less than five other kinsmen. Five rupees are then paid to the girl's father, baskets of flowers and fruit are presented to the bride herself and her mother, and the proceedings are closed by the marriage ceremony, which is performed by the family priest or a barber. The inhabitants, as a body, shun society. Mr. Conybeare says their language will become extinct.

DUDRENEE. Chevalier Dudrenee, a native of

Brest, son of a commodore of the French navy. About 1791 he left the command of the Begum Sumroo's Brigade and joined Tukaji Holkar, and with his battalions he contributed to the victory of the 12th March 1795 at Khardla. He left Jeswunt Rao's service in 1801 for that of Sindia. He surrendered to the British, 30th Oct. 1803, but it was his battalions which fought the subsequent battle of Laswari.

DUFF, CAPTAIN JAMES GRANT, author of History of the Mahrattas.

DUFF and Surode, musical instruments. The Duff or Duffra, or Tambour de Basque; tympanum; according to Gentius (Sadi Rosar. Polit. p. 303), a sort of bass tambourine played upon with a stick.

DUFFADAR. HIND. An officer of irregular cavalry; the head of a party of labourers.

DUGDHA, a tribe of inferior Brahmans on the borders of Futtehpur and Allahabad. They date their origin from the time of Jye-chand, who figures in many fabulous legends of those parts. The Pande, who were Dugdha Brahmans (*i.e.* of mixed blood), received 48 villages, of the greater part of which they are in possession to this day.—*Elliot's Supp. Gloss.*

DUGGY, in Madras, round timber from 20 to 40 feet long, 1 to 2½ feet square.

DUGLA or Dauri. HIND. A bamboo basket swung on double ropes, and worked by two men in irrigating land.

DUGONG. MALAY. The sea siren, merman, mermaid. Professor Owen denominated the dugong of the Archipelago, Halicore Indicus, in distinction from that of the northern coast of Australia, at a time when the former had not been ascertained to frequent (as a dugong of some kind is now known to do) the Malabar coast and Gulf of Calpentyn in Ceylon.

Halicore Dugong.

Trichechus dugong, *Gmel.* | Dugungus Indicus, *Ham.*

Indian dugong, . ENG. | Mermaid, . . . ENG.
Sea siren, Merman, ,, | Le dugong des Indes, FR.

This inhabits the shallows of the Indian Ocean and about Ceylon, where the water is not more than two or three fathoms deep. It does not appear to frequent the land or the fresh water. Its flesh is delicate. The dugong was noticed as occurring in Ceylon by the early Arab sailors, by Megasthenes (Fragm. lix.) and Ælian, and subsequently by the Portuguese. It is this creature which has given rise to the tales about mermaids which have till the present day occupied the world, and doubtless had their origin in the tales of the Arab sailors. They are phytophagous or plant-eaters. Numbers are attracted to the inlets from the Bay of Calpentyn to Adam's Bridge, by the still water, and the abundance of marine algæ in these parts of the gulf. One which was killed at Manaar in 1874 measured upwards of 7 feet in length, but specimens considerably larger have been taken at Calpentyn; and their flesh is represented as closely resembling veal.

Halicore Australis, manate of Dampier, white-tailed manate of Pennant, is a native of the west coast of Australia, and is called also the sea-cow. About the month of January the dugong shows itself in Port Mouat Bay, coming to feed upon a species of seaweed, which is also relished by the

Halicore Indicus, *F. Cuvier.*

Trichechus dugong, *Erxl.* | H. tabernaculum, *Rup.*
Halicore cetacea, *Illeg.* | Dugungus marinus, *Tiede.*
H. dugong, *Cuv.*

Dugong, . . . MALAY. | Parampuan Laut, MALAY.

Under these synonyms Dr. Theodore Cantor unites all the above, which he says inhabits the Red Sea, the seas of the Malay Peninsula, Singapore, Sumatra, the Philippine islands, Moluccas, Sunda islands, and New Holland. It is supposed that the dugong can be easily domesticated. Doubtless the ancient Arab stories gave rise to the mermaid tales which have since then occupied the world, for it is this creature that has given rise to all the fables about the mermaid and the merman. Tennyson writes of

> 'A mermaid fair
> Singing alone,
> Combing her hair,
> Under the sea,
> In a golden curl,
> With a comb of pearl,
> On a throne.
> At night I would wander away, away;
> I would fling on each side my low-flowing locks,
> And lightly vault from the throne, and play
> With the mermen in and out of the rocks;
> We would run to and fro, and hide and seek,
> On the broad sea wolds in the crimson shells
> Whose silvery spikes are nearest the sea.'

—*Eng. Cyc.; Blyth in Beng. As. Soc. Jour.; Tennant's Ceylon; Dr. Theodore Cantor in Beng. As. Soc. Jour.*, No. clxxii. Decr. 1846.

DUH. SANSK. To milk. Hence Duhitar and Duhitri, a milker, a daughter.

DUHAI. HIND. Justice! An exclamation still made in Hindustan from an individual who considers himself injured. 'Duhai, Maharaj! Duhai, Company Bahadur!'—Justice, justice, my lord! Justice, Company Bahadur!—*Yule, Cathay*, ii. 436.

DU HALDE, J. B., author of Description of the Empire of China, Chinese Tartary, Corea, and Tibet.

DUHARU. BENG. A caste of fishermen and divers.

DUHET. ARAB. A cove or bay. Duhet Dilam, Hafah, Kabir, Kubal, Kathemeh, Selwah, Shahrah, Shisheh, are in the Persian Gulf, and Gwettur in Baluchistan.

DUHSASANA and Duryodhana, sons of Dhritarashtra. Duhsasana behaved brutally to Draupadi, and he was afterwards killed by Bhima when fighting in the battle at Kuru-kshetra.—*Dowson.*

DUJA. ARAB. Blood money, paid by a criminal to the relatives of a murdered person.

DUK or Dok. JAV. The hair-fibre of the Arenga saccharifera, Gomuti, MALAY.

DUKAR. MAHR. Hog; Sus scrofa. Dukkar-ki-charbi, HIND., hog's lard.

DUKSHIN-ACHARI. SANSK. From Dukshina, the right hand, and Acharin, acting.

DUKU, the Malay and Javanese name of a tree and fruit of the Lansium domesticum, and natural order Meliaceæ of botanists. To the same genus belong the langseh, langsat, or langsab, for in all these forms the word is written, and also the ayar-ayar, L. aqueum. The duku is the most esteemed of them, and to the European palate is the best of the native fruits of the Archipelago, after the mangostin. The natives class it after the durian and mangostin. It is of the size of a pigeon's egg, of globular form, and covered with a coriaceous

skin of the colour of parchment. The species seems to be indigenous in the western portion of the Archipelago, but to have been introduced into the Philippines, where one variety of it, the labgseh, is cultivated.—*Crawfurd's Dict.* p. 125.

DULCAMARA or Solanum dulcamara is the Shuh-yang-ts'iuen of the Chinese. Dulcamara contains an active narcotic alkali, solanine, narcotic and diuretic. Solanum nigrum, Arrub-us-saleb, may possess similar virtues.—*Beng. Disp.*

DULHA. ARAB. A bridegroom. Dulhan, a bride. For the Dulha-Deo of India the Greeks had Adonis, Ganymede, Hylas, and Thammuz.

DULLA. HIND. Carbonate of soda. A soda salt or natron from the waters of the lake of Lunar; it is used in dyeing, in medicine, and the arts.

DUM, in Afghanistan, a class of servants attached to families of rank, whose wives serve in the women's apartments, and are go-betweens in marriage negotiations.

DUMA, HIND., also written Duma, is the name of the leather case in which tea is imported from Tibet into Garhwal and Kamaon. It contains about three seers, and bears a price of six or seven rupees.

DUMAGUDEM, on the Upper Godavery, 120 miles from Sironcha, and same from Ellore. Coal occurs about 15 miles N. of Dumagudem, near the junction of the Tal river near Lingala.

DUMAI MURALEE, in Cachar, the first crop of rice, sown in April.

DUMBA. HIND. A flat-tailed sheep of Peshawur, Kābul, the Salt Range, and the Cape. Dumki marchi, the tailed pepper, cubebs. Dumki satārā, a comet.

DUMB-BELLS. See Magdar.

DUMDUM, a subdivision of the 24 Parganas, in which, near Calcutta, there is a military station of same name, in lat. 22° 38′ N., and long. 88° 30′ E., and 4½ miles from Calcutta.

DUM-I-GURG, or the wolf's tail, is the Persian name for the first brushes of grey light which appear as forerunners of dawn. Dūm is a tail.

DUMKI, a brave and martial tribe of Baluchistan who inhabit Eastern Kachi; part of them were removed to Sind by Sir Charles Napier in 1845.—*MacGregor, N. W. F.* p. 502.

DUMOH, a district in the Jubbulpur division, lying between lat. 22° 10′ and 23° 30′ N., and long. 79° 5′ and 80° E. It is situated on the table-land of the Vindhyan range of hills, and is 90 miles long from N. to S., and 50 broad, with an area of 2799 square miles, and 269,642 inhabitants, largely Gond, Kurku, Lodhi, and Kurmi. See Damoh.

DUMUR. TEL. A name for the Bhatu athletes. Dumbram, TAM., Dumbar war, TEL., and called also Khollati. See Bhatu.

DUN. HIND. A valley; a term locally applied in the Siwalik Hills, under the Himalaya, as Patlee Dun, Dehra Dun. It seems to be the same word in the Celtic and Indo-European languages, as well as in the Arabic. In English, the adverb Down implies descent, and Down, the noun, a sloping hill, an elevated plain, or hillock of sand on the sea-shore. See Dunes.

DUN. BURM. In Arakan, a land measure 30,720 square yards, therefore equal to a little more than 6¼ English acres.

DUNAH or Dooab, in Rajputana, is a portion of the dish of which the prince partakes, sent by his own hand to whomsoever he honours at the banquet. At the russora, or refectory, the chiefs who are admitted to dine in the presence of their sovereign, are seated according to their rank. The repast is one of those occasions when an easy familiarity is permitted, which, though unrestrained, never exceeds the bounds of etiquette, or the habitual reverence due to their father and prince. When he sends, by the steward of the kitchen, a portion of the dish before him, or a little from his own khansa or plate, all eyes are guided to the favoured mortal, whose good fortune is the subject of subsequent conversation. Though, with the diminished lustre of the Rajput house, the dunah may have lost its former estimation, it is yet received with reverence.—*Tod's Rajasthan*, i. p. 317.

DUND or Dhand. SINDI. Pools, ponds, or lakes on the line of the river Narra, from Sukkur to Omerkot, or about 100 miles. The Narra is only filled with water during the inundation of the Indus river, and even this not often; it never reaches the sea, but is lost in the sand near Omerkot. Betwixt this and Sukkur there are at least 360 dund, most of which contain water throughout the year. They are from 300 to 400 yards across, but often many miles in length. They all become brackish during the hot weather. They abound in fish.—*Captain Del Hoste in Bom. Geo. Trans.* ii.

DUND, or Dun, or Dungar, is in several dialects derived from the Sanskrit, a hill or mountain, as it was also in some of the old languages of Europe. —*As. Res.* ix. p. 98.

DUNDA. The best-known boats on the Indus are the Zoruk of the Upper Indus, the Dunda, which plies from Mithankote to the sea, and the Dugga, which is specially suited, from its strong build, to the navigation of the rapids between Attok and Kalabagh. The better kinds of wood used in their construction (sissoo and large babul) are procured with difficulty, and various species of timber are generally seen in one boat, such as sissoo, babul, deodar, chir, bahn, and karil. Malabar teak is much prized in the Lower Indus, and fetches a large price. The ordinary ferry boats are constructed by the sides and bottom being prepared separately, and brought together to be secured by knees or crooked pieces nailed to the bottom and sides. The bottom is made of sissoo, the knees of mulberry or olive, and the side planks of deodar. The wedges and trenails are usually made of tut and kahu. Ropes for rafts and boats are prepared either from hemp (Cannabis Indica), sirki (Saccharum spontaneum), Typha latifolia, dib, or other grasses, common on the river bank. Munj (Saccharum munja) is also largely employed by the native boatmen. The great boat-building localities of the Panjab are Pind Dadun Khan, Wazirabad, and Jhelum, but there is a marked increase on the Indus, not only at Attok, but at Nowshera, Hashtnagar, Mokhud, and Kalabagh.

DUNDGIRI. HIND. A very populous village, adjoining the esplanade of Bombay fort.

DUNDOO-MALE, gum-resin of the Doona Zeylanica tree.

DUNES occur in India near the sea, and to leeward of the beds of rivers, also on the Indian desert, and in the desert of Gobi, where the sand

waves are overwhelming cities. In the Indian desert are to be seen multitudes of the Teeba rising 400 or 500 feet high. Newbold describes dunes of the Hogri and Pennar rivers, and mentions the overwhelming of Bodurti, a village of Konigul, also of an old village near Jummulmadagu, and the encroachments on the village of Honoor, 20½ miles S. from Bellary. In the Landes of Gascony, many dunes exceed 225 feet; some attain 391 feet elevation; and on the W. of Africa, near Cape Verde, they are no less than 600 feet high. See Down; Dun.

DUNG. BHOTI. An encampment of shepherds and herdsmen in the N.W. Himalaya.

DUNG. TIB. The wild yak of Darjiling.

DUNG of birds and bats is applied medicinally externally, and given internally by the Chinese. That of the avadavat, Fringilla amandava; of the common house sparrow, Passer montanus (Kung-ma-tsioh-fen, CHIN.); of the magpie (Hae-hau-chung, CHIN., and Wu-ling-chi, CHIN.), is applied externally in leprosy; and the dung of the white pigeon, Tso-pwan-lung, CHIN., left-coiling dragon, is an external veterinary medicine.—*Smith.*

DUNGA, a punt or broad boat of Kashmir.

DUNGANI, the great Ouigoor horde in Eastern Turkestan. They are Turk, and became Mahomedans in A.D. 966. The Chinese call them Hoeike, Oihor, and Hoai-Hoai. Towards the close of the 8th century, the emperors of the Tang dynasty deported about a million of Ouigoor people from the neighbourhood of Kashgar, and settled them at Kan-su and Chen-si. About A.D. 966, these families embraced Mahomedanism, and under their chief Satook they conquered Transoxiana, and carried away captive an immense number of Turks of the Turghai tribe. In 972, the majority of these captives were allowed to return to their homes, but many remained, and they were styled Turghani or Tunghani, signifying remnant, and corrupted into Dungen. They are all Mahomedans, but dress like Chinese. They are abstemious, religious, quarrelsome, using the knife; honest, and fond of trade. The Dungan or Turgen race, following Mahomedanism, in the N.W. of China, rose in rebellion against the Chinese in 1867. The Burmese call them Tharet; their own name for themselves is Muslim. In 1881, the delegates of the inhabitants of Kuldja chose the following districts for the colonization of the Dungan and the remaining Tarantchi, for whom there is no room on the Tchilik steppes,—for the Dungans, the district Toknak, between the rivers Soukulouk, Aksu, and Tchou; for the Tarantchi, a part of the same district, situate between the rivers Alartcha and Soukulouk.

DUNGAREE. HIND. Datta, TAM. A coarse cotton fabric manufactured in various parts of India, and used by the poorer classes of natives. The stouter kinds are much employed in the making of sails for native sailing vessels and tents. Dungaree is woven with two or more threads together in the web and woof. It is generally used for sails of country ships, and would no doubt be advantageously employed for the occasional light sails for larger ships, being more easily handled than European canvas. Superior descriptions are made with the web and woof, or web only, twisted either wet or dry, but this becomes as expensive as the best English canvas. The prevailing price of the ordinary dungarees, 30 cubits.—that is, 15 yards long, and 2 feet wide,—is 1 rupee 12 annas; the piece at Masulipatam being brought from Raylungy, a village and taluk to the northward, where a finer description, well adapted for tents, is made at 7 rupees the piece of 36 yards, 1 yard wide. About Vizagapatam, the ordinary dungaree is usually sold by weight. The best Bengal tents appear to be made of an open-textured dungaree, the threads of w'ich are finer than is usual in dungarees. Like all other cotton goods, dungaree should not be exposed to the weather in sails, tents, etc., till the weavers' dressing and filth has been thoroughly removed by washing and partial bleaching.—*Faulkner; Rohde, MSS.* See Cloths.

DUNGARPUR, a native state in Rajputana, ruled over by a Maharawul in a town of that name, in lat. 23° 52′ N., and long. 73° 49′ E. The population of the state in 1878 was 175,000. Three-fourths of the inhabitants are Hindus, one-eighth Jains, and one-eighth Musalmans. The Bhils aggregate about 10,000 souls. The family is an offshoot of the house of Udaipur. On the fall of the Moghul empire, Dungarpur, like other Rajput states, became tributary to the Mahrattas. The tribute of Rs.35,000 levied from it was transferred to the British Government by the treaty of 1818, with Jeswunt Singh, in return for its protection. —*Imp. Gaz.*

DUNG BIRD, Neophron percnopterus.

DUNGING OF CLOTHS is a process resorted to by dyers, both in the East Indies and Europe, the object being to impregnate cotton cloths with animal matter, for which many dyes have a strong affinity.—*Rohde, MSS.*

DUNGTEN, a bone or relic receptacle of the Buddhist religionists. The chaitya is any sacred object worshipped by the Buddhist, as a tree, an altar, a temple, as well as any monument raised on the site of a funeral pile, as a mound or pillar, and is probably applicable both to the Buddhist chodten, or offering to the deity, and the dungten, a bone or relic receptacle. The stupa or chaitya of Indian Buddhism is supposed to have been erected subsequent to the cave temples and viharas or monasteries. The ancient stupa were originally meant as receptacles of either the Buddhas or the Bodhisatwas and the kings who encouraged the propagation of the Buddhist faith. The chodten or chorten of Tibet are similar to the stupa. They consist of a cylindrical vase, and have a cupola over them. The dungten, on the other hand, correspond to the dhagoba of the Sanskrit, is a bone or relic receptacle, built in honour of the mortal Buddhas, and ought to contain some portion of their relics, real or supposed. —*Cunningham.* See Buddha; Stupa; Topes.

DUNIADAR or Danyadar, a mode of address among fakirs.

DUNORHUNG, a Penang wood of a brown colour, sp. gr. 1·235. Used by the Chinese for carving images.

DUPADA NUNA, TEL., is Dupada oil, or Piney tallow. Dupada resin exudes from the Vateria Indica, and constitutes the piney varnish. The resin is used as a fragrant incense in temples; the quantity procurable is very considerable.—*M. E. J. R.*

DUPERRON. Anquetil Duperron, without means, and in the face of great hardship, learned the Zend from some Parsee priests at Surat, and

returned to France in 1762 with over a hundred manuscripts.—*Sayce.*

DUPLEIX, JOSEPH FRANCIS, an eminent French commander, who served in the Peninsula of India in the middle of the 18th century, and made great efforts to sustain French interests there, against the British. He opposed Anwar-ud-Din and his son Muhammad Ali, in opposition to Major Stringer Lawrence, who was contending against Chanda Sahib. Dupleix failed in an attack on Fort St. David, on the 19th December 1747. His efforts were directed to expel the British from the Peninsula, his chief British opponents being Lawrence and Clive. In that time, Madras, Fort St. David, Cuddalore, Arcot, St. Thomé, repeatedly changed hands. He was appointed chief of Chandernuggur, and succeeded M. Dumas as governor of Pondicherry. He was of a bold, self-reliant, but haughty character, and was much thwarted by M. de la Bourdonnais. It was in his time that Madras was taken and held by the French, and again restored to the British. He twice failed to take Cuddalore. He negotiated largely and formed alliances with native chiefs,—with Chanda Sahib, Muzaffar Jung, and Nasir Jung. In 1752 he was appointed by Salabut Jung, Subahdar of the Dekhan, Nawab of the Karnatic. For his services he was created a marquis; but misfortunes overtook him, and he was superseded by M. Godeheu, and returned to France in September 1754. On his return, the French Government refused to pass the bills for the sums which he had ordered to be disbursed on his own responsibility, and he was reduced to extreme poverty. He was shamefully ill-treated, and three days before his death, in 1754, he wrote in his memoir, 'I have sacrificed my youth, my fortune, my life, to enrich my nation in Asia.' His great name shed a lustre on the struggles of his countrymen for empire in the East.—*Orme; Malleson.*

DURA. Daniel iii. 1 tells us that Nebuchadnezzar the king made an image of gold, whose height was threescore cubits, and the breadth thereof six cubits. He set it up in the plain of Dura, in the province of Babylon. This is the modern Imam Dour, on the left bank of the river. —*Rich's Kurdistan*, ii. p. 148.

DURA, HIND., a whitish blanket of Basahir.

DURAND, SIR HENRY MARION, K.C.S.I. and C.B., entered the Bengal Engineers in June 1828, and promoted to Major-General in 1867. He served in the Afghanistan campaign; headed the explosion party, and fired the train at Ghazni; served also at Gwalior and in the Panjab campaign at Chillianwalla and Gujerat; was afterwards Agent to the Governor-General in Central India. He was for a brief time Commissioner of the Tenasserim Provinces. He was also Military Secretary to the Government of India. Invested with the Order of the Star of India in June 1867. He was a sagacious political officer. In 1857 he stood to his ground, and stemmed the flood of mutiny from bursting into Hyderabad and pouring down the Dekhan. In January 1871 he was killed on an elephant, entering a gateway on the Tank frontier. Wrote on Dadapur Fossils in Bl. As. Trans. v. 291; On the Barometer, ibid. 301; On Fossil Rhinoceros, ibid. 486; Carnivora, 579; Shells, 661; Quadrumana, 730.—*Howell Thurlow; Dr. Buist's Catalogue.*

DURANTA ELLISIA, one of the Verbenaceæ, a beautiful large shrub, with light blue pendulous scentless flowers. D. Plumieri is also a large shrub, with handsome drooping blue flowers having the scent of almonds; the clusters of seed-berries, which are numerous, when ripe, have a very pretty appearance from their dark orange colour; they do not appear to germinate readily.—*Riddell.*

DURBA CHAPALOO. TEL. A kind of mat made in Ganjam from the fibres of the Sanseviera Zeylanica.

DURDU, an old secluded pastoral race in Gilghit and Chulas, on the Indus river, on the north. The Afghans on the one side, and the Turkomans on the other, are pressing on them. See Dard.

DURGA, a form of Parvati, and wife of Siva. She corresponds with Juno of the Greeks and Romans, and the Isis of the Egyptians, as also with Ceres and Proserpine. Durga is also known as Bhawani, Kali, Devi, and Singhwani. As Durga, she is represented with ten arms. In one hand she holds a spear, with which she is piercing the giant Mahesha; in another, a sword; in a third, the hair of the giant, and the tail of a serpent is twined round him; and in others, the trident, the discus, the axe, the club, the arrow, and the shield. One of her knees presses on the body of the giant, and her right foot rests on the back of a lion, which is lacerating his arm. On her head she has a crown richly gemmed, and her dress is magnificently decorated with jewels. The giant is issuing from the body of the buffalo, into which he had transformed himself during his combat with the goddess. From this victory she took the names Durga and Singhwani, or Lion Rider.

Like the Ephesian Diana, Durga wears the crescent on the head. She is also 'the turreted Cybele,' the guardian goddess of all places of strength (durga), and like her she is drawn or carried by the lion. As Mata Janavi, the 'Mother of Births,' she is Juno Lucina; as Padma, 'whose throne is the lotus,' she is the fair Isis of the Nile; as Tripura, 'governing the three worlds,' and Atma-devi, 'the goddess of souls,' she is the Hecate Triformis of the Greeks. In short, her power is manifested under every form, from the birth through all the intermediate stages until death, whether Janavi, Gouri, or the terrific Kali, the Proserpine or Calligenia of the West.

As Parvati, Bhavani, Durga, or Devi, she is the sakti or personified energy of Siva. And the yoni, the symbol of female energy, is the emblem of this goddess, as the lingam is that of her husband.

In the different terrific forms of Siva and Durga, a necklace of skulls forms an invariable decoration, as does the crescent moon on her forehead; and the moon is considered to be the peculiar reservoir of Amrita, or the beverage of immortality. In Hind. Theatre, ii. p. 59, Aghora Ghanta, invoking Chamunda, says of Durga:

> 'The elephant hide that robes thee, to thy steps
> Swings to and fro; the whirling talons rend
> The crescent on thy brow; from the torn orb
> The trickling nectar falls; and every skull
> That gems thy necklace laughs with horrid life.'

She combines the characteristics of Minerva, Pallas, and Juno, and in her amiable character is often called Bhawani. Durga is worshipped in the form of a water-pot. It is called Ghata puja, also Ghatashthapana. A water-pot is placed, and, after certain ceremonies, Durga is supposed to enter it, and she is then worshipped.—*Tod's Rajasthan*, i. p. 576.

DURGA. Sansk. Durg or Doorg, hence Droog. A hill fort, a fort. Durga means difficult of access, from Door, prep., and Gam, to go.

DURGA PUJA is the festival of Durga, held in Bengal in the month of Aswin, about October, and on this occasion the images of her sons, Kartikeya and Ganesha, are usually placed on each side of her. In Calcutta this is the most splendid and expensive, as well as the most popular, of any of the Hindu festivals, and takes place in the month Aswina, the end of September or beginning of October. The preliminary ceremonies occupy several days previous to the three days of worship. During the whole of this period all business is suspended, and pleasure and festivity prevail. This festival is known among the Mahrattas as the Dasserah. In the Durga puja, a sacred jar is an essential article in the celebration of the mysteries, and is marked with the combined triangles denoting the union of the two deities, Siva and Durga. The Sakta sect, worshippers of the sakti, or female principle, mark the jar with another triangle. The Vaishnava in their worship use also a mystical jar, which is also marked. These marks, Mr. Paterson says, are called tantra, and are hieroglyphic characters, of which there are a vast variety. He hence deduces the identity of the Durga puja with some Egyptian rites of a corresponding nature. In some parts of the country there are figures paraded of a coarsely licentious character, but these are being forbidden. The festival, with its boisterous and obscene merriment, its vigils of three successive nights, its monetary extravagance, its ludicrous sights, its licentious exhibitions, deteriorates the moral health of the community. On the fourth and last day no sacrifices are offered. After religious adorations, the officiating priest dismisses the goddess, and implores her to return the next year. The dismissing ceremony over, the females of the house lament the departure of so beneficent a deity. The goddess is presented with gifts, and the dust of her feet is rubbed on the foreheads of the votaries. The idol is paraded through the streets with great pomp. The streets resound with music and singing, and the acclamations of the worshippers. As it passes along the streets, the spectators join their hands in form of adoration. The parade over, the idol, with all its trappings and its tinsel ornaments, is cast into the waters, where the people vie with one another in rifling the goddess of her decorations.—*Sir John Malcolm in Tr. Bombay Lit. Soc.; Cole. Myth. Hind.* p. 91; *Paterson, Essay on the Origin of the Hindu Religion; Asiatic Researches*, viii. p. 401.

DURGARASPATNAM, a seaport village on the Nellore coast of the Bay of Bengal, in lat. 13° 59′ N., and 55 miles N. of Madras. It was known to the British as Armegon, from the circumstance that when they settled there, and it was their first site on the Coromandel coast, the name of the Kurnam or village accountant was Armagam Mudliar.

DURGAVATI, pronounced Durgouti, was the daughter of the Chandail king of Mahoba, the ancient capital of Bundelkhand. With her father's consent, the Gond king of Gurhah Mundla carried her off with an army of 50,000 men. After her husband's death, Asof Khan, a general of Akbar, in 1564 advanced to annex Gurhah Mundla, but, as her son was a minor, Durgavati assembled 1500 elephants, 8000 horse, and some foot, and, clothed in armour, met the Moghul forces and drove them back. Asof again advanced, and was again defeated, with a loss of 600 men. A third effort was successful, her son was wounded, and her troops fled; she herself was wounded, and she ended her life with a dagger. Her tomb is still to be seen in a narrow defile between two hills, and passers-by place crystals on her grave. Her name still rests in Gond story (As. Res. xv. p. 437). She was interred at the place where she fell (Ben. As. Soc. Journal, vi. 628), and to this day the passing stranger places as a votive offering one of the fairest he can find of those beautiful specimens of white crystal in which the hills in this quarter abound. Two rocks lie by her side, which are supposed by the people to be her drums converted into stone; and strange stories are told of their being still occasionally heard to sound in the stillness of the night by the people of the nearest villages.

DURG BANSI. Hind. A tribe of Rajputs in Jonpur and Azimgurh.

DURGI MURGI WALE of Kolhapur, are Hindu wanderers, who exhibit idols and beg. Their favourite objects of worship are Lakshmi and Hanuman.

DURIA MADDEE, also Kora maddee and Koraman. Tel. Briedelia spinosa. A tree of the Godavery; wood very strong and good. Cattle eat the leaves most voraciously.—*Beddome.*

DURIO. The name of this genus of plants has been derived from Durian, a well-known fruit of the Malay Archipelago. The specific name of Zibethinus has been applied to the tree from its fruit smelling like the fetid zibet (Viverra rasse, *Hors.*). The genus belongs to the order Sterculiaceæ.

DURION, a tree of Sumatra; its trunk is hollowed out as a coffin of the Batta rajas.

DURIO ZIBETHINUS. *Linn.*

Du yeen, . . .	Burm.	Dorian, ...	Eng.
Du yeen yaing, .	„	Turrien, ...	Siam.

The durian is a large and lofty tree of the Malay Peninsula, the Eastern Archipelago, and the Moluccas. The flowers are arranged in clusters on the trunk and older branches, where is also borne the fruit, as in the jack tree. It is of the size of a melon, covered with sharp points; when ripe, the outer skin opens spontaneously, and the interior consists of five lobes of a creamy consistence and a whitish colour, in which are nuts more or less numerous. During May and June it is in season; but there is usually also a second crop in November. It is as remarkable for the delicacy, combined with richness, of its flavour, as for the intolerable offensiveness of its strong and persistent smell, which repels most Europeans, possessing an odour so powerful and diffusive as to taint the air of a whole town when it is in season, and steamers carrying the fruit stow them in the tops. It is sometimes compared to a rolled-up hedgehog; hence it has been called Echinus arboreus, in consequence of its hard and thick rind, which is yellow-coloured when ripe, being covered with firm and angular projections. The seed, with its edible enveloping pulp, is about the size of a hen's egg. The pulp is as white as milk, and as delicate in taste as the finest cream; but it should be eaten fresh, as it soon becomes discoloured, and undergoes decomposition. When

the fruit is ripe it falls of itself, and getting them as they fall, the smell is less overpowering. When the fruits begin to ripen, they fall daily, and almost hourly, and accidents not unfrequently happen to persons walking or working under the trees. The seeds are likewise eaten when roasted, and have something of the flavour of chestnuts. The wood of the tree is valued for many economical purposes, especially when protected from moisture. The rind, probably from containing potash, is used in the preparation of some dyes. The natives of the countries yielding the durian prize it beyond all other fruits. In countries with a suitable climate, it flourishes without care or culture. It is most abundant in the western portion of the Archipelago, and extends east as far as the island of Mindano, the only one of the Philippine group in which it is known. It is abundant in Siam, and is found on the coast of Tenasserim about lat. 14°, which is the furthest distance from the equator to which it has been successfully propagated. All attempts to cultivate it in any part of Hindustan have failed; nor has it, like some other Asiatic fruits, been transferred to tropical America. A hot, moist, and equable climate would seem to be indispensable to the durian; but soil seems to be indifferent to it, for it thrives in the granitic, in the sandstone, and in the calcareous soil of the Malay Peninsula and Sumatra, in the volcanic soil of Java, and in the rich alluvium of the valley of the Menam in Siam. The name is from Duri, MALAY., a thorn or prickle, in reference to the sharp tubercles with which the rind is covered. In the interior of the Malay Peninsula, in several places in the forest are found durian trees, always in a body together, to the number of about ten or twelve trees. Such places are for the Jakuns an object of great attention, and matter of work. They cut with the great axe all the other trees which surround the durians, that these, by receiving more air, may grow up more easily, and give finer and a greater quantity of fruit. They build there a small house, and then return to their ordinary habitations, which are sometimes distant from such places one or two days' journey. Durian is seen to grow spontaneously in one of the small islands of the eastern coast of the Malay Peninsula, and which is nearly one entire forest down to the margin of the sea. On Pulo Tingi, the Orang Laut, or sea-gipsies, assemble, attracted from the coasts of the Peninsula, as well as from the islands of the Johore Archipelago. On one occasion, six boats from Moro, an island of that group, were found on their way to Pulo Tingi; they had travelled by sea a distance of 180 miles, to partake of the fascinating fruit.—*Roxburgh*, iii. p. 398; *Marsden's Hist. of Sumatra; Mason's Tenasserim; M'Clelland, Eng. Cyc.; Crawfurd, Dict.* p. 126.

DURK'HEE, HIND., also written Durk'hi, an insect whose ravages are very destructive to indigo, when the plant is young.

DURKOTEE. This petty chieftainship pays allegiance to the British Government, and is exempted from all pecuniary liability. Revenue, 500 rupees; population, 612.—*Aitcheson, Treaties.*

DURRA, a corruption of Dwar, a barrier, pass, outlet, or portal. Mokund is one of the epithets of Krishna. Mokundurra and Dwaricanat'h are synonymous, the pass and portal of the deity.—*Rajasthan*, ii. pp. 702, 703. See Dooar.

DURRAH, a Pindara brigade.

DURREE. HIND. A woollen cloth of Ambala and Bahawulpur.

DURUNG. MALAY. In Bawean, a hall of audience or of reception, before the houses.

DURVA. HIND. Poa cynosurioides. Vishnu, as Rama, in his seventh incarnation, assumed the colour of this grass, which is therefore held sacred to that god, and used by the Vaishnava in all religious ceremonies.

DURVASAS, in Hindu legend, a rishi of a choleric temper, whose curse was of dreadful effect. He is described as the son of Atri and Anasuya He cursed Sakuntala for keeping him waiting at the door; he foretold that Krishna would be killed, because Krishna did not wipe particles of food off his foot; but he blessed Kunti, so that she became a mother by the sun. He cursed Indra to lose his sovereignty over the three worlds, and Indra had recourse to Vishnu to be restored to health.

D'URVILLE. Admiral Dumont d'Urville, an eminent French navigator, who left France in 1837 with the l'Astrolabe and La Zélée corvettes, on a voyage of discovery in the Antarctic Ocean. He perished on the 8th May 1842, in the fire that destroyed the cars on the Paris and Versailles Railroad.—*Am. Exped.* p. 278.

DURYODHANA was the eldest son of king Dhrita-rashtra, and, being of the elder branch, retained his title as head of the Kuru, while the junior, Yudishtra, on the separation of authority, adopted his father's name, Pandu, as the patronymic of his new dynasty. He educated along with his own 100 children, the five sons of his brother Pandu; but he took a dislike to Bhima, and the Pandava princes went into exile, where his enmity followed them, and he failed in an attempt to burn them in their home. On their return from exile, he gambled with Yudishtra, eldest of the five Pandu princes, and won their entire possessions, even to the freedom of themselves, and even of their wife Draupadi, whom he ordered to sweep the room, and on her refusing, his brother Duhsasana behaved rudely towards her. Yudishtra having lost his kingdom, his wife, and even his personal liberty and that of his brothers, for twelve years, became an exile from the plains of the Yamuna. The Kaurava and Pandava fought for dominion. The site of the great conflict, known as the Mahabharat, between these rival clans, is called Kuru Khetu, or Field of the Kuru. On the 18th day of the battle, Bhima fought with and wounded Duryodhana, so that he died of the injuries he received.—*Dowson; Garrett.*

DUSSUMIERIA ACUTA. *C. and V.* Tamban bulat. Head above, back, and upper third of the sides, deep glossy blue, bordered by a longitudinal band of pale copper-red; the rest of the head and body shining silvery. Single individuals occur at Penang at all seasons, but numbers from June to September. It is highly valued for its delicate flavour, and passes commonly as a sardine. The latter denomination it shares, however, with Clupeonia perforata, with which it is also confounded by the Malays under the common name of Ikan tamban. Both have been prepared as sardines à huile. See Clupeidæ.

DUST and Dust-storms.

Poussière, Poudra,	FR.	Gird,	HIND.
Staub, Ohrfeige,	GER.	Polvere,	IT.
Khak, Peshaah,	HIND.	Toz,	TURK.

Dust is carried along with winds to great distances. Sirocco or African dust has been found by the microscope to consist of infusoria and organisms whose habitat is, not Africa but S. America, and carried in the track of the S.E. trade wind of S. America. In the dust of the Cape Verdes, Malta, Genoa, Lyons, and the Tyrol, Ehrenberg discovered separate forms. Dust is blown from Arabia and Africa far to seaward, causing a great haze. During four months of the year, a large quantity of dust is blown from the N.W. shores of Africa, and falls on the Atlantic over a space of 1600 miles in latitude, and for a distance of from 300 to 600 miles from the coast. But dust has been seen to fall at a distance of 1030 miles from the shores of Africa. Darwin mentions that in some of the dust 330 and 380 miles from Africa, falling in the sea near the Cape de Verde Islands, particles of stone occur $\frac{1}{1000}$th of an inch square. Dust-storms are very frequent in India, and usually have a north to south course. One commenced at Allahabad about seven A.M., and continued till one P.M., retaining the same fury as when it began. On the evening of the 17th, Secunderabad had been visited with an unusually severe dust-storm. It came from the N.W. and was accompanied by lightning and thunder. The air to a considerable height was rendered almost opaque by dense clouds of red dust. The wind raged with great fury for upwards of half an hour, and on its abating was followed by a heavy shower of rain. A dust-storm passed over Madras on Sunday the 19th, beginning at one P.M. It had passed over Kristnapatam, seventeen miles S.E. of Nellore, at half-past ten o'clock in the forenoon of that day, accompanied by a slight fall of rain. In the north of the district between Ongole and Ramapatam, there was a heavy fall of rain in the forenoon of Sunday, averaging from two to four inches. At Chingleput, thirty-six miles south of Madras, the storm was experienced in full force at that station at two P.M. the same day. It came from the N.W., and the wind was laden with vast quantities of reddish dust; no refreshing shower succeeded the storm.

A dust-storm occurred over 3800 square miles, from Ningpo to Shang-hai, on the 15th March 1846. It consisted of a congeries of light downy fibres or hairs, with silex adhering to them, and an admixture of an alkaline salt. In China, according to Richthofen, beds appearing like fine sediment, several hundred feet in thickness, and extending over an enormous area, owe their origin to dust blown from the high lands of Central Asia.

Whirling dust-storms are caused by spiral columns of the electric fluid passing from the atmosphere to the earth; they have an onward motion, a revolving motion, like revolving storms at sea, and a peculiar spiral motion from above downwards, like a corkscrew. It seems probable that in an extensive dust-storm there are many of these columns moving on together in the same direction, and during the continuance of the storm many sudden gusts take place at intervals, during which time the electric tension is at its maximum. These storms, in the Panjab, mostly commence from N.W. or W., and in the course of an hour, more or less, they have nearly completed the circle, and have passed onwards. Precisely the same phenomena, in kind, are observable in all cases of dust-storms; from the one of a few inches in diameter, to those that extend for fifty miles and upwards, the phenomena are identical. It is a curious fact that some of the smaller dust-storms occasionally seen in extensive and arid plains, both in the Panjab and in Afghanistan above the Bolan pass, called in familiar language devils, are either stationary for a long time, that is, upwards of an hour, or nearly so, and during the whole of this time the dust and minute bodies on the ground are kept whirling above into the air; in other cases, these small dust-storms are seen slowly advancing, and when numerous, usually proceed in the same direction. Birds, kites, and vultures are usually seen soaring high up just above these spots, apparently following the direction of the column. They may be looking for prey, or involved in and unable to fly out of, the invisible part of the electrified aërial column, of which the lower part only is visible to us by the dust raised. The phenomena connected with dust-storms seem to be identical with those present in waterspouts and white squalls at sea, and revolving storms and tornadoes of all kinds; and they apparently originate from the same cause, viz. moving columns of electricity. In 1847, at Lahore, an observer, being desirous of ascertaining the nature of dust-storms, projected into the air an insulated copper wire on a bamboo on the top of his house, and brought the wire into his room, and connected it with a gold-leaf electrometer and a detached wire communicating with the earth. A day or two after, during the passage of a small dust-storm, he had the pleasure of observing the electric fluid passing in vivid sparks from one wire to another, and of course strongly affecting the electrometer. Afterwards, by the same means, he observed at least sixty dust-storms of various sizes, all presenting the same phenomena in kind. Commonly, towards the close of a storm of this kind, a fall of rain suddenly takes place, and instantly the stream of electricity ceases, or is much diminished; and when it continues, it seems only on occasions when the storm is severe and continues for some time after. The barometer steadily rises throughout. In the Panjab plains, the fluctuation of the barometric column is very slight, seldom more than two or three tenths of an inch at a time. The average height at Lahore is 1180, corrected for temperature, indicating, it is supposed, above 1150 feet above the level of the sea, taking 30 inches as the standard. A large dust-storm is usually preceded by certain peculiarities in the dew-point, and the manner in which the particles of dew are deposited on the bulb of a thermometer. The mode of taking the dew-point is to plunge a common thermometer in a little ice, and let it run down 20° or 30°. The manner in which the electricity acts upon the dust and light bodies it meets with in its passage, is simple enough. The particles are similarly electrified and mutually repulsive, and then, together with the whirling motion communicated to them, are whisked into the air. The same takes place when the electricity moves over water. The surface of the water becomes exposed to the electric agency, and its particles, rendered mutually repulsive, are in the same way whirled into the air. At sea the waterspout is thus formed. First of all is seen the cloud descending, and beneath

may be observed the water in a cone.—*Bengal Asiatic Soc. Journal*, No. v. of 1850, p. 790; *Darwin*, p. 239.

DUTCH. This name, in the English language, is given to the people of Holland, who call their own country Niederland or Netherland. They have occupied parts of the East Indies since the middle of the 16th century. Ceylon was occupied by the Portuguese in 1596, but was taken possession of by the Dutch in 1658, and by the British in 1797. They had small possessions on the continent of India, chiefly near Cochin. They had taken Malacca, Nanning, and neighbouring sites, but some of these were retaken by arms by the British, and others were obtained from them by negotiation under the treaty of 17th March 1824. At present they occupy or hold under feudatories a great part of the Eastern Archipelago, and their territories there are styled the Dutch East Indies, also the Dutch Indies, also the Netherlands Possessions in India, and Netherlands India. This nation first came to the Eastern Archipelago as the servants of the Portuguese. Their first expedition on their own account (consisting of four ships) sailed from Holland in 1595, with Cornelis Houtman as supercargo. They reached Bantam in 1596, where Houtman was imprisoned for some time. On this voyage they touched at Madera (Hitoe Lama or Amboyna was not visited by Houtman). Pieter Both, the first governor-general, was appointed in 1610. The seat of his government was established in Fort Jacatra. During the administration of Jan Pieters Koen, the fourth governor-general, this was changed to Batavia. In 1749, the Susunan of Mataram (after the fall of Majaphit, the most powerful native prince in Java) transferred to the Dutch the civil and military jurisdiction of his kingdom. He was at that time at war with his brother Mangkoe Boemi. The war lasted till 1755, and the Mataram territory was then apportioned to the brothers,—Surakarta to the Susunan, and Jokyokarta, with the title of sultan, to Mangkoe Boemi. These two principalities continue independent of each other to the present, although diminished in extent.

The Dutch possessions in Netherlands India comprise subject and feudatory states. The former is Netherlands India proper, and consists of Java and Madera, arranged into 23 civil districts. In the tributary states the old reigning families remain, but in every state a resident is appointed, and under his superintendence the native administration is carried on, much in the same way as is done under similar circumstances in India. Some states, which have not been subdued, are under treaty engagements.

The area of the principal islands of Netherlands India, according to Baron Melville Van Carnbee, 445,411 square English geographical miles. Population, 23 millions.

	Sq. ms.		Sq. ms.		Sq. ms.
Java&Madura,	38,251	Celebes,	57,248	Tenimber Is.,	2,400
Sumatra,	128,560	Buton,	1,379	Aru Islands,	1,040
Pulo Nias,	1,200	Bali,	10,848	Is. of Banda,	17
Babi,	480	Lombok,	16,560	Ceram,	4,944
Pagi,	560	Sumbawa,	4,448	Buru,	2,624
Banca,	3,568	Floris,	4,032	Gilolo,	5,016
Billiton,	1,904	Timur,	9,803	Bachian,	800
Rioux,	...	Sandal-wood Islands,	3,784	Ternate,	11
Borneo,	203,888			Amboyna,	2,128

In the year 1880 the population of the two divisions of Netherlands India was as under:—

Netherlands India Proper, 38,251 square miles. Population of each district of Java and Madera in the year 1880.

	Euro.	Natives.	Chin.	Arab.	Others.	Total.
Bantam,	428	592,051	1,623	22	..	594,124
Batavia,	7,211	859,782	75,224	1,003	127	941,347
Krawang,	218	300,333	3,877	40	..	304,968
Preanger,	993	1,577,077	2,274	189	5	1,580,538
Cheribon,	948	1,277,573	15,630	1,231	94	1,295,476
Tegal,	599	937,957	6,119	257	13	944,945
Pekalongan,	526	510,922	4,889	712	41	517,090
Semarang,	5,159	1,255,441	15,921	717	1006	1,278,244
Japara,	623	826,942	10,170	90	567	838,394
Rembang,	654	1,035,013	16,341	271	69	1,052,348
Sourabaya,	5,941	1,701,062	13,185	1,955	483	1,722,626
Pasarian,	1,474	724,574	5,066	835	56	732,005
Probolinggo,	842	401,917	2,341	380	..	405,480
Beseki,	578	441,688	1,022	627	..	443,915
Banjiwangi,	165	64,606	241	347	..	65,350
Banjemas,	584	1,011,928	3,770	11	74	1,016,367
Bagelan,	550	1,252,204	3,017	2	139	1,255,912
Kedoe,	616	703,477	5,465	86	6	709,650
Diokia Karta,	1,510	459,891	1,846	169	17	463,433
Sera Karta,	2,026	958,631	6,486	59	232	967,437
Madien,	546	992,184	3,444	9	..	996,183
Kediri,	1,008	763,064	7,031	..	..	771,103
Madera,	509	804,015	3,932	1,516	163	810,135
Total,	33,708	19,542,835	206.914	10,528	3092	19,797,077

Settlements and Residences.

	Eur.	Natives.	Chin.	Ar.	Others.	Total.
Sumatra, West Coast.						
Padang,	1001	289,937	3,530	54	511	294,083
Tapanoli,	371	171,112	769	29	137	172,418
Bencoolen,	159	142,501	569	17	2	143,248
Lampong,	77	125,401	246	18	14	125,756
Palembang,	280	621,900	4,245	1941	124	627,690
Sumatra, East Coast,	435	110,071	29,857	..	24	140,387
Atchin,	228	474,300	3,509	222	839	479,098
Rioux,	181	64,502	22,925	8	159	87,775
Banka,	181	48,922	20,063	136	10	69,312
Billiton,	79	23,055	7,592	..	13	31,333
Borneo, Western,	238	329,554	27,894	1654	856	360,196
Borneo, S. Eastern,	562	652,781	2,824	439	47	656,653
Celebes & Depend.,	1355	373,677	4,573	190	..	379,795
Menado, Minahassa,	700	131,411	2,218	33	..	134,362
Menado, Gorontalo,	76	99,946	138	19	..	100,179
Amboyna,	1451	277,730	499	288	14	279,982
Ternate,	154	100,285	480	107	..	101,026
Timor & Depend.,	216	..	1,026	85	..	1,327
Bali and Lombok,	31	65,306	395	138	1662	67,532
Bali and Buleleng,	..	..	..	..	..	..
Bali and Jembrana,	8	12,881	8	69	..	12,966
Total,	7972	4,763,542	133,827	5470	4108	4,914,919

In 1877 the revenues were as under:—

A.	Licences (opium licence, for slaughter of cattle, for pho and topho games, for sale of Javanese and Chinese tobacco, birds' nests, caves, etc.),	f. 19,056,625
	The income from the opium duty amounted to	16,389,960
	Import and export duties and excise,	9,162,825
	Property tax (rate levied on real property which is not subject to the land tax) and tax on the spice grounds in the Banda Islands,	1,563,178
B.	Public sales,	680,152
	Small stamps,	872,088
	Duty on transfer of real property,	465,895
	Duty on carriages,	469,973
	Succession duty,	93,251
	Tax on markets,	3,638
	On private lands (the tax on the other markets was abolished in 1852),	...
	Licences for Chinese gaming tables,	32,700
	Tax on the slaughter of cattle, etc., in the Preanger,	52,447
	Tax on professions,	1,738,699
	Special taxes in the possessions outside Java and Madura,	1,334,987
	Contributions of inland princes,	238,386
	Incomes from land (ground rent, tax on fish ponds, and a tenth of the rice crop, saltpans, and sugar-cane in the government of Celebes),	16,349,662
	Transfer of freehold, ground lease, and building lease,	538,640

Birds' nests (so far as not leased),	f. 44,288
Woods and forests (leases, sale of timber, etc.),	831,094
National printing establishment,	109,388
Salt monopoly,	6,705,796
Letter post,	688,654
Horse post,	65,914
Telegraphs,	504,933
Railways,	50,053
Port anchorage and pilot dues,	248,912
Sale of coffee,	60,441,761
Sale of tin,	3,904,247
Sale of quinine,	87,880
Excise on sugar-cane plantations, of manufactories working on contracts with the Government,	4,095,282

The figures giving the value of the imports and exports for private account were for 1877.

Imports, f. 126,067,000	Merchandise,	112,705,000
	Specie,	13,362,000
Exports, 163,392,000	Merchandise,	161,863,000
	Specie,	1,529,000

The army of 30,000 men which Holland maintains in these dependencies is entirely distinct from that in Europe. It is under the Minister for the Colonies, and is commanded by a Lieut.-General, whose position is next to that of the Governor-General. The islands have military commands:—

Three divisions in Java, with their headquarters at Batavia, Samarang, and Sourabaya.

One division for West Sumatra and its dependencies, headquarters at Padang. The districts of Lampong, Palembang, Banka, Kiow, and dependencies.

The W. division of Borneo, headquarters Pontinak.

The E. and S. division of Borneo, headquarters Bandjermasin.

Celebes, headquarters Macassar.

The Moluccas, headquarters Amboyna.

The regulars comprise in definite proportions, Europeans and natives. Enlistment is voluntary. The officers of all arms are furnished from the Military Academy at Breda, from non-commissioned officers of the army in Europe, who pass certain special examinations, and from the non-commissioned officers of the colonial army, who pass successfully through the schools. There are also a certain number of officers detached from their corps in Holland for five years, who are replaced during their absence by officers of the colonial army. Of the European rank and file, one half are Dutch, and the remainder French, Swiss, and Germans. In the island of Java are concentrated nearly all the military establishments, and the greater part of the troops.

The native soldiers comprise men from the coast of Guinea, from Celebes, Amboyna, Madura, and Java, and of these the best are said to be the Amboyna and Guinea men. The Schutterij are a sort of national guard, composed of Europeans and natives from sixteen to forty-five years of age; they can be mobilized for service, but not out of the islands to which they belong. The Pradjoerits are small bodies of native soldiery, which serve as guards to the residents and Dutch authorities. They comprise about 2000 men, and cannot be sent on service beyond their own districts. Finally, there are the Dyayangsecars, a sort of native *gendarmerie*, commanded by European officers.

The troops kept up by native princes can also be mobilized for service on the Governor-General's orders. These are called Barrisans, and are reported to be brave men. They comprise infantry, cavalry, and artillery, and are paid by the Malay princes.

In 1854, Amboyna, Ternate, Banda, and Kayeli were made free ports.—*Bikmore*, p. 147; *Count de Hogendrop, Coup d'œil sur l'isle de Java*, Brussels, 1830, No. iv., Oct. 1857; *Jour. Ind. Arch.*; *Temminck's General View of the Dutch Possessions in the Indian Archipelago*; *Straits Times*; *Civil and Military Gazette*; *Regering's Almanac*, 1882.

DUTT, from Datta, a gift, a frequently occurring name amongst the Hindus of Calcutta, as Deo-dutt, Theodotus, God's gift. See Datta.

DWAIJA. SANSK. A twice-born man; a man of any of the three first classes or castes of the Hindus, the Brahman, Kshatriya, and Vaisya, after being initiated into their respective tribes by investiture with the sacred thread, which is called a second birth. Various ceremonies are attendant upon these caste Hindu boys between infancy and the age of eight years. After that age, and before a Brahman boy is fifteen, it is imperative upon him to receive the poita, zonar, janavi, or jhandiam, the sacred thread, which the Brahmans, in their secret ceremonies, call Yadnupavita. The investiture of a Brahman boy, after a variety of preliminary ceremonies, is thus performed. The priest first offers a burnt sacrifice, and worships the salagrama, repeating a number of prayers. The boy's white garments are then taken off, and he is dressed in yellow or red, and a cloth is brought over his head, that no Sudra may see his face; after which he takes in his right hand a branch of the vilva tree, Ægle marmelos, and a piece of cloth in the form of a pocket, and places the branch on his shoulder. A poita of three threads, made of the fibres of the suru, to which a piece of deer's skin is fastened, is suspended from the boy's left shoulder, falling under his right arm, during the reading of the invocations. The father of the boy then repeats certain formulas, and in a low voice pronounces three times, the gaitri O'm! Bhurbhuvā ssuvāha, O'm! Tatsa vit'hru varennyām, B'hargo devāsyā dhimahi dhiyo yonaha pracho dayath. O'm! earth, air, and heaven, O'm! 'Let us meditate on the adorable light of the divine Sun (ruler), Savitri; may it guide our intellects.' After this the suru poita is taken off, and the real poita, or sacred thread, put on. During this ceremony the father repeats certain formulas; the suru poita is fastened to the vilva staff, shoes are put on the boy's feet, and an umbrella in his hand, as if prepared for a long journey. The receiving of the poita is considered as the second birth of a Hindu, who is from that time denominated 'dwaija,' or twice-boru. A Brahman boy cannot be married until he has received the poita. The sacred thread must be made by a religious Brahman. It consists of three strings, each ninety-six hat'h or cubits (forty-eight yards), which are twisted together; it is then folded into three, and again twisted; these a second time folded into the same number, and tied at each end in knots. It is worn over the left shoulder (next the skin), extending halfway down the right thigh, by the Brahman, Kshatriya, and Vaisya castes, and in Southern India by the artisans. The first are usually invested with it at eight years of age, the second at eleven, and the Vaisya at twelve. The period may

from especial causes, be deferred; but it is indispensable that it should be received, or the parties resisting it become out-castes. They do not consider an individual as fully a member of his class until he have assumed this emblem. It is, in its import, the counterpart of the confirmation of the Anglican Church. Of these zonars, a Brahman wears four, the other privileged tribes but three. Some writers call this the brahmanical, or priestly or sacerdotal, thread; but it is not being confined even to the priestly tribe, but worn by three out of the four tribes of Hindus, and by all the five sections of the artisan class, the kansala of the Hindus, viz. the goldsmith, brazier, blacksmith, stonecutter, and carpenter. The number of three threads, each measuring ninety-six hands, for the sacrificial string, may have some mystical allusion to the ninety-six fixed annual sacrifices. The number three is mystical with almost all nations, and with the Hindus may refer to the same source as the three sacred fires, the three legs of Agni, the triad of divine powers, etc. Ninety-six does not, however, arise from any ordinary process of three, and seven, and two, the distinguishing numbers of Agni's legs, arms, and faces. —*Moor*, p. 379; *Cole. Myth. Hind.* pp. 155, 245.

DWAITYA, Adwaitya, and Vasistadwaitya are three great schools of Brahmanical philosophy. Dwaitya is the doctrine of duality, distinguishing two principles in creation, spirit and matter. It is opposed to the Adwaitya or Monad doctrine, which acknowledges the reality of spiritual existence only. The followers of Madhavacharya, who are Vaishnava sectarians, adopt the Dwaitya or dual philosophy, and maintain that the soul of man is distinct from that of the deity.

DWAJASTAMBHA. SANSK. A flagstaff; a pillar bearing an ensign.

DWAPARA. SANSK. From Dwa, the second, and Para, after. The Dwapara-yuga, in Hinduism, the third age of the world, the brazen age, extending to 864,000 years:

'The Dwaper yug! ah then,—
Preposterous that one biped vain
Should drag ten housewives in his train,
And stuff them in a gaudy cage,
Slaves to weak lust or potent rage,—
One buxom dame might wed five men.
True history in solemn terms
This philosophic lore confirms;
For India once, as now cold Tibet,
A group unusual might exhibit,
Of several husbands, free from strife,
Linked fairly to a single wife!
But, lest my word should nought avail,
Ye fair, to no unholy tale
Attend:—Five thousand years ago,
As annals in Benares show,
When Pandu chiefs with Curus fought,
And each the throne imperial sought,
Five brothers of the regal line
Blazed high with qualities divine:
The first a prince without his peer,
Just, pious, liberal Yudhishteir;
Then Arjun, to the base a rod,
An hero favoured by a god;
Bhima, like mountain-leopard strong,
Unrivalled in the embattled throng;
Bold Nacul, fired by noble shame
To emulate fraternal fame;
And Sohdeo, flushed with manly grace,
Bright virtue dawning in his face;—
To these a dame devoid of care,
Blithe Draupady, the debonair,
Renowned for beauty and for wit,
In wedlock's pleasing chain was knit.'

DWAR. HIND. A gate or entrance. A term applied to the mountain passes leading from the plain at the foot of the Himalaya into Bhutan, also to the rich and fertile level tract itself. The Dwar are occupied by an Indian race. They are 18 in number. Their breadth varies from 10 to 20 miles, and their extreme length 220. They are in a narrow tract extending along the foot of the lower range of the Himalaya, and very unhealthy, and are inhabited by the Mech or Kachari and the Koch'h or Rajbansi, in all about 37,047. The Eastern Dwars is a flat strip of country lying beneath the Bhutan mountains, intersected by numerous streams, and overgrown with wild vegetation. The West Dwars include the tract of country at the base of the Bhutan hills from the Tista river to the Sunkos river on the east. It is about 25 miles broad, and terminates on the northern limits of Rungpore, Koch'h Behar. The Bhutan government had been guilty of raids and of grossly insulting a British ambassador, and in 1863 to 1865 the Dwars were seized and annexed. The Mech are cognate to the Koch'h, Kachari, Garo, and Rabha. They are widely scattered over all N.E. Bengal, being able to support life in the malarious Terai that continuously fringes the first slopes of the Himalayas. The social condition of the Mech is very low. They are migratory, and their marriages are by abduction, but they are honest and trustworthy. Rajbansi is a name assumed by those Koch'h who have adopted Hinduism.—*Imp. Gaz.; Ann. Ind. Adm.* xii. p. 87.

DWARA, a portal, a door, the Celtic Dorras. Amongst all nations of antiquity, the portal had its peculiar veneration. To pass it was a privilege regarded as a mark of honour. The Jew Haman, in the true oriental style, took post at the king's gate as an inexpugnable position. Natives of India visiting prominent men, or attending court, alight at a distance from the portal. The most pompous court in Europe takes its title from its porte, the bab or door, where, as at Udaipur, all alight. The tripolia or triple portal, the entry to the magnificent terrace in front of the Udaipur rana's palace, consists, like the Roman arcs of triumph, of three arches, still preserving the numeral sacred to the god of battle, one of whose titles is Tripuri, which may be rendered Tripoli, or lord of the three places of abode, or cities, but applied in its extensive sense to the three worlds, heaven, earth, and hell. From the Sanskrit Pola, we have the Greek Polis, gate or pass; and in the guardian or Polioh, or Dwara palaka, the doorkeeper or porter; and the English language is indebted, not only for its portes and porters, but its doors (dwara). Pylos signified also a pass; so in Sanskrit these natural barriers are called Pala, and hence the poetical epithet applied to the aboriginal mountain tribes of Rajasthan, namely, Palipati and Pala-Indra, lords of the pass. Nat'hdwara is the most celebrated of the fanes of Krishna, the Hindu Apollo. Its etymology is 'the portal' (dwara) 'of the god' (nat'h), of the same import as his more ancient shrine of Dwarica or Dwarka. Nat'hdwara is 22 miles N.N.E. of Udaipur, on the right bank of the Bunas. Although the principal resort of the followers of Vishnu, it has nothing very remarkable in its structure or situation. It owes its celebrity entirely to the image of Krishna, said to be the same that had been worshipped at

Mathura ever since his deification, between eleven and twelve hundred years before Christ. As containing the representative of the mildest of the gods of Hind, Nat'hdwara is one of the most frequented places of pilgrimage, though it must want that attraction to the classical Hindu which the caves of Gaya afford.—*Tod's Rajasthan*, i. pp. 323–589.

DWARA SAMUDRAM, the modern Halibidu, a town in Mysore. It was at one time held by the Bellala, a Yadava race.

DWARKA or Dwaraka or Dwaravati, the City of Gates, also called Abdhi-nagara, is at the W. extremity of the Gujerat peninsula, in lat. 22° 14′ 20″ N., and long. 69° 5′ E. The great temple, the most famous shrine of Krishna, is at the point of the Saurashtra peninsula called Juggut Koont. In the time of Krishna it seems to have been a hotbed of drunkenness. The people suddenly fell on each other after a great drinking bout, and many were killed. A storm-wave overwhelmed the city, and destroyed more of them; but Krishna, his brother Arjuna, and a few others escaped. It is one of the seven sacred cities of the Hindus; population 4712. At Dwaraka the god of thieves is called Budha Trivicrama, or of triple energy,—the Hermes Triplex, or three-headed Mercury of the Egyptians. Dwarka, in Okamandel, was taken 25th November 1820.—*Tod's Rajasthan*, i. p. 75; *Wheeler's Hist. of India*.

DWARKANATH TAGORE, an enlightened Hindu and religious reformer of Bengal, who travelled through Italy and France on his way to England. He returned once to his native country, but again revisited England and died. He took with him several medical pupils to be educated there. He adopted theistical views, and his example originated the Hindu sects known as the Brahmo-Samaj'h and Vedo-Samaj'h.

DWIPA. SANSK. An island, from Dwi, two, and Ap, water; also an extensive region or continent. The cosmography of the Agni Purana divides the world then known to the Hindus into seven dwipa or continents,—(1) Jambu-dwipa, (2) Alaksha, (3) Salmali, (4) Kusa, (5) Krauncha, (6) Saka, (7) Pushkara. Jambu-dwipa, according to the Hindus, the division of the world in which India lies, was so named because the jambu tree grows in it. Saka-dwipa, whose inhabitants descended from Bup'ha, are termed Saceswara, *i.e.* Sacæ lords. Bup'ha's offspring or descendants were Julud, Sookmar, Manichuk, Koorum, Ooturés, Darbeeka, Drooma, each of whom gave his name to a Khand or division (qu. Sookmar Khand). The chief ranges of mountains were Juldus, Raivat, Siamah, Indue, Amki, Rim, and Kesari. There were seven grand rivers, viz. Mug, Mugud, Arverna, etc. The inhabitants worship the sun. We must believe that this Saka-dwipa or Sacatai is the Scythia of the ancients; and the Saceswara (the Saca of Menu), the Sacæ so well known in western history, the progenitors of the Parthians, whose first (ad) king was Arsaca. The sun-worship indicates the adorer of Mithras, the Mitra or Surya of the Hindu; the Arverna recalls the Araxes applied to the Jaxartes; while Julud, the proper name of the son of the first king of Saka-dwipa, appears to be the Juldus of the Tatar historian Abulgazi, who uses the same term as does the Hindu, to designate a range of mountains. Whence this identity between Puranic and Tatar cosmography? The grand international conflicts amongst the fifty-six Yadu tribes at Kuru Khetra, and subsequently at Dwaraka, are sufficiently known to the reader of Hindu history. A chief of the twice-born tribe (*i.e.* Brahmans) was brought by Vishnu's eagle from Saka-dwipa, and thus have Saka-dwipa Brahmans become known in Jambu-dwipa. And Menu says that it was only on their ceasing to sanction Brahmans residing amongst them, that the inhabitants of these remote western regions became M'hlecha or barbarians, testimonies which must be held conclusive of perfect intercourse and reciprocity of sentiment between the nations of Central Asia and India at periods the most remote.—*Tod's Rajasthan*, ii. pp. 218, 219; *Transactions of the Royal Asiatic Society*, vol. iii., *vide paper entitled Comparison of the Hindoo and Theban Hercules; Mr. Colebrooke on Indian Classes; As. Res.* v. p. 53.

DYA DWIVEDA, author of the Niti Manjari, a Sanskrit work on ethics.—*Dowson*.

DYAUS. SANSK. The sky, heaven. Dyaus pitar, Heavenly Father, the Zeus, Deus, Jovis, or Ju-piter of the Greeks and Romans. He is a male deity, father of Ushas, the dawn; the Low German Du-us, probably the English slang word Deuce, the French god-demon, Dusius.

DYAVA-PRITHIVI, heaven and earth, in the Vedas are represented as the universal parents, both of gods and men.—*Dowson*.

DYES and Dyeing.

Teinture,	Fr.	Tinta,	It.
Färben,	Ger.	Tinte,	Sp.
Rang,	Hind., Pers.	Boza,	Turk.

Dyeing is the art of imparting to wool, hair, silk, cotton, linen, leather, etc., colours which resist the operation of washing, and the wear to which they are subject, when made up into articles of furniture or clothing. The art was known at a very early period. Jacob made for Joseph a coat of many colours (Genesis xxxvii. 3); and in Exodus frequent mention is made of the ornaments for the tabernacle, as being composed of blue, purple, scarlet, and fine linen. About B.C. 1400, the Mahabharata describes the colours of garments worn by men and women, which could only have been produced by dyes. Later on, at the first synod or congregation of Buddhist monks, held in the year B.C. 543, they arranged themselves according to their rank, each in its appropriate place, and the hall glittered with the yellow robes of the monks. Both the male and female ascetics wore the same yellow-coloured robes, though it is also stated that the three garments they wore were of a dark red colour. These two colours, the turmeric yellow and the Indian red, are still the outward distinctions of the ascetic and the religious orders of the Hindus and Buddhists of the present day. The simple turmeric yellow, occasionally reddened with alkali, is chiefly used by Hindu females on religious occasions, as emblematic of chastity and purity, as was evidently the custom in ancient times. There are evidences in the rock-cut temples of Ajunta and of Bagh, which are as old as the 6th century, that the art of dyeing had advanced considerably at that period. The paintings there represent several figures in various-coloured clothes, and in others striped with red, blue, and white, a pattern which may be seen in India to this day. In the Bagh caves in Central India, which are nearly as old as those of Ajunta, Dr. Bhau

Daji detected in the garments on the figures of two dancing men, the circular-patterned checkers, very much after the style now used in Jeypore and in parts of Gujerat. The fresco paintings at Ajunta are believed to exhibit the dresses worn in that part of India, from B.C. 200 to A.D. 800 or 1000; and besides garments of many colours, they show coloured borders and ends to white cloths. Pliny mentions the flags of various colours displayed by the Indians; and the Egyptians may have learned the art from the Hindus, from whom they doubtless obtained the alum celebrated by the name of Egyptian alum, the manufacture of which is still carried on in Cutch.

We read also in 2 Chronicles ii. 14 of Solomon having sent to Tyre for coloured linens, and the king of that country sent him a man skilful to work 'in purple, in blue, and in fine linen, and in crimson.' Still nearer the Christian era, Ezekiel (593 B.C.), in his prophecy against Tyre (xxvii. 7), speaks of 'blue and purple from the isles of Elishah.' The Tyrian dye is supposed to have been obtained from two molluscs, described by Pliny under the names purpura and buccinum. Their colour was durable, but very costly. Pliny states that a pound weight of the double-dipped Tyrian purple was sold in Rome in the time of Augustus for 100 crowns (equal to about £30 of our money). Citizens of Rome wore purple attire until the time of the emperors, when the use of purple was restricted to them; and the manufacture languished until the 11th century, and then became extinct. In the 17th century the art of dyeing purple was revived by Mr. Cole of Bristol, and in the 18th century by M. Reaumur of France; but by this time finer colours had been discovered, and cheaper processes invented. We learn from Pliny that the competitors in the circus were clothed in dresses of green, orange, grey, and white; but the art of dyeing was lost at Rome after the invasion of the northern barbarians in the 5th century. About the end of the 12th century, Florence became celebrated in the art, and in the early part of the 14th century numbered not less than 200 dyeing establishments. The discovery of America supplied Europe with a variety of new colouring matters, such as indigo, logwood, quercitron, Brazil-wood, cochineal, arnotto, etc. Before the introduction of indigo, woad was used in Europe for dyeing blue; and the cultivators of this plant endeavoured to prevent the use of indigo, which, by a decree of the German Diet in 1577, was declared to be 'a pernicious, deceitful, eating, and corrosive dye.' The introduction of logwood was opposed from similarly interested motives. Its use was prohibited by a statute of Elizabeth, under heavy penalties, and all of it found in the country was ordered to be destroyed. It was not until the reign of Charles II. that its use was permitted. The method of dyeing Turkey-red—one of the most durable of colours—early discovered in India, was afterwards practised in other parts of Asia and in Greece. About the middle of the 18th century, some Greek dyers established dyeworks for this colour in France, and in 1765 an account of the method of producing it was published, by order of the French Government. About the end of the 18th century, a Turkey-red dyehouse was established in Manchester by a Frenchman, who obtained a grant from the British Government for the disclosure of his process, which, however, was not very successful. A better process was introduced into Glasgow by a Frenchman named Papilon; but before this, Mr. Wilson of Ainsworth, near Manchester, had obtained a process from the Greeks of Smyrna, which he made public. Still more recently, in the middle of the 19th century, a discovery by Faraday, and, after him, by other chemists, of a series known as the aniline dyes, has lessened the value of the madders, cochineal, turmeric, and safflower.

India and China furnish all the raw materials for a great variety of colours; and as indigo undergoes a considerable degree of chemical change during its formation, as well as while applied to the dyeing of its blue colour, the people must have early known how to manufacture the several salts which have long been employed as mordants. Mr. Rohde does not think that any durable colours are communicated by natives of India to cotton cloth, except reds and blacks, and modifications of the one or the other; their deep blues, yellows, and other colours seemed to him very fugitive.

The success which the art attained in India is owing chiefly to the abundant supply of materials, whilst the simplest possible form of working these materials has been adopted. The forest products in many places are collected by the dyers or their families. The myrobalan is often left to rot on the ground. The dyers conduct their operations on some river bank, or close to a well with a plentiful supply of water. A fireplace of bricks, and mud utensils of simple make, a large cistern for the principal dye-beck, a hollowed stone for a mortar, and such-like, are enough for the dyer in India, and are what his fathers have used for ages. Yet with these simple means, the Indian dyer, without any great knowledge of chemistry, works with results which were once the admiration of the world, and are even still sufficiently creditable to him. In the west of India, for a time, the Khatri engrossed the art to themselves. But the trade was also taken up by Mahomedans, who are in India designated Rangrez. In the early days of European intercourse with India, the dyed cloths of Gujerat were received with great favour in the Portuguese market of Goa; and colonies of dyers were invited to settle under European protection at Diu and Daman, where dyeing was for a time largely carried on. But the dyers of Western India have fallen behind their brethren in Hindustan, especially those in the Panjab, Kashmir, and Sind, the last country having always been famous for its pre-eminence in this respect.

The *dyeing industry* in the N.W. Provinces is conducted in two distinct branches, each of which is followed by a separate class of Mahomedans. These are the Rangrez, who dye in plain colours, and the Chipi, who are calico printers. The former generally dye cloths which customers send them; the Chipi purchase plain fabrics, which they print and sell. The Chipi sometimes also dye plain colours, such as the kharua (coarse red) cloth of Mau Ranipur, and the salu, which is a finer cloth, dyed red. The Rangrez also produce varieties of colours by combination of different dyes.

In the *calico printing* of India, the apparatus consists of some patterned wooden blocks, and an earthen pot, on which a light cover is placed

framework is fitted. Over this is placed a thick cloth, generally of wool. The cloth to be printed is stretched on a padded board, and the colour is hand-printed on the cloth with the dye, or a mordant only is printed, the colour being subsequently applied by boiling.

The *carpet-weavers* of Bangalore, in the most simple manner, obtain their various soft shades, from a light greyish-white through brown and dark greys to black, by sorting the natural fleece, and by their combination are produced the harmonious effects observed in the Bangalore carpets. The bags of wool, coming in just as they are clipped, are picked over by women and boys, and the different shades of wool separated, to be spun into different-coloured yarns. These dull colours forming the groundwork of the carpets, are relieved to a certain extent by indigo blues and turmeric yellows, and by a dull green when the two are combined. But the bright purples, reds, oranges, and greens, observable on all but the plainest carpets, are now aniline, and the juxtaposition of these fugitive colours with the absolutely fast shades of the natural fleece is very curious. The aniline colours are fleeting. In the bright light of India they go in a few months, or even days, if exposed to direct sunlight; but a little bright colour with no increase of prices tempts many purchasers.

Most of the colours used in dyeing are vegetable, a few are from the animal and mineral kingdom. The most vivid and brilliant vegetable colours, such as those of flowers and other parts of plants exposed to the light, are small in quantity, very fugitive, and difficult to separate. The colouring matters of plants capable of being isolated, are mostly yellow, brown, and red. Blue dyes furnished by plants are indigo and litmus. No black vegetable dye has been isolated. Most vegetable colours are soluble in water, and those which are not so can be dissolved in alcohol, ether, or the fixed oils. Vegetable colours are permanent in dry air, but they gradually fade in moist air, especially under the influence of light. The blue of most flowers is converted into red by an acid, and into green by an alkali. But the methods of dyeing vary with the nature of the dyestuff, and also with that of the material to be dyed, different methods being adopted for cotton, silk, and wool.

In India, the secrets of the mixtures of colours, of the methods of extracting the dyes, of the use of mordants, and of producing every variety of tint that may be necessary, descend from father to son. The Indian dyers have no chemical processes as known in Europe, but safflower, madder, turmeric, indigo, are used to produce the brightest and most delicate tints of scarlet, pink, rose colour, crimson, purple, yellow, orange, and green. The colours are for the most part very pure and beautiful, and the combinations of colours and tints are most ingenious. The people do not admire brilliant or gaudy colours for garments. The tints in these have almost a neutral effect. Sober greys, dull but rich madder and cochineal reds and crimsons, neutral greys, browns, greens, and purples, with dull but rich yellows, are arranged by the weavers so as to produce richness and sobriety of effect, with the utmost harmony of combination. Bright or gaudy colour is used only sparingly, and then only to produce the contrast which may be necessary. Whatever may be the colour or tint or pattern used, whether in monotone, striped, or checked, perfect harmony exists, and the effect is never glaring or in bad taste. The dyes are either permanent or temporary. In the former are the yarns for weaving both silk and cotton cloths; in the latter are white cloths, such as muslin; turbands, scarfs, and the like are dyed in the piece, to suit the tastes of their customers. The latter are purposely kept unfixed, as a scarf or turband can be more easily and perfectly washed and re-dyed than a permanently dyed cloth be cleansed from impurities. Goats' dung is largely employed. Women's garments are usually woven with yarns with fixed dyes, as they have to undergo almost daily washing and exposure to the sun in drying, yet the colour almost never fades, but seems to grow brighter and clearer from constant exposure. The strong satins, striped and plain, called mushroo and hemroo, used for women's trousers and petticoats, as well as by men for trousers and other garments, must needs be of permanent colour, for repeated washing. In most parts of India, Mahomedan ladies wear nothing but this material for their nether garments, which are sent to the wash with as much confidence as if they were cotton, and with as little injury.

The natural patterns of the Panjab, Baluchistan, and Sind, are large and bold, but the colours are harmonious. The favourite artistic Cocanada rugs is one of the most pleasing of the Indian carpets. The short, even-piled carpets of Turkomania and Kerman have a glorious elaboration in colour and design.

The mode of *printing in colours* is by block printing and knot-dyeing. For the former process, the designs are usually cut out from teak-wood (Tectona grandis), the pattern standing out in high relief, and the hollows being cut very deep. Besides the numerous patterned blocks called bibun, the implements required by the calico printer are, the gadi, which is a wooden tray, in which three or four layers of country woollen cloth (dhabadi) are laid, and which are kept soaked with the intended colours. Besides, there is a table over which are stretched three or four layers of thick cotton cloth, and on the top a woollen cloth, over which lies the cloth intended for printing. The printer usually squats with the table in front of him, on which he works from morning to night. The engraved surface is dipped in a preparation of the dye, to which a mixture of gum-arabic has given a consistency. When the cloth has to be printed in metallic leaf, the block is dipped in gum and impressed on it, and tin, silver, or gold leaf is then stuck on to the adhesive design. Another way of printing, called 'khad,' is to charge the blocks with putty, and cover the impression with talc.

The calico printed goods of Sind rank the highest, and next to them those of Diu and Daman, whence issue bedcovers, sarees, dhotis, and children's cloths of divers kinds. There is often a wonderful combination of colours in the patterns of these goods.

Knot-tying is either done on a plain or coloured ground, according to the kind of pattern required. The lines are printed with an aqueous solution of Indian earth (red ochre), so as to be easily discharged during the dyeing process. The tyer

keeps the following nails long, viz. of the forefinger and the thumb of the right, and of the thumb, the forefinger, and the middle finger of the left hand. To tie the cloth, he takes either a thin or thick cotton yarn, according as the design is in fine or large patterned spots. At the place where the spot is to be, the cloth is raised up into a fold by means of the pointed long nail of the middle finger, and the fold is now caught between the long nails of the forefinger and of the thumb of the left, and a knot tied by means of the yarn held between the long nails of the right hand, by passing the yarn quickly four or five times round and round, and finishing the motion with a knot, by which the yarn is secured to its place. This process is repeated on one spot after another with the same thread so quickly, that a practised hand goes over an area of cloth extending 3 feet square in the course of 12 hours. A close pattern is workable during the same time only to the extent of about 1 foot square. The daily earning of the tyer is estimated at ¼ rupee a day. After the knot-tying is finished, the silk cloth is taken to the dyer. To produce a black ground, it is dyed red in cochineal. The steeping in the dye-beck is repeated twice, so that the red colour penetrates the thread and fixes itself into the white spots (kanda) covered by the thread. Once steeping fails to allow the penetration. For large spots (kanda) it is necessary to dye red three times. The cloth is now submitted to the indigo vat, then washed and dried. This process appears to have been first devised to overcome the difficulty met with in the production of white spots on a dark-dyed ground. It is largely practised in Gujerat, Cutch, Sind, and Bombay, and is scarcely met with in other parts of India. From this it appears that it had its origin in Gujerat, Cutch, and Sind. Knot-dyed goods, which are generally handkerchiefs, sarees (women's scarfs), bodices, petticoats, trousers, borders, turbands, etc., and executed chiefly for consumption among the Gujerati and Parsees. They are manufactured either in cotton or silk, the latter kind being common among the Parsees. The patterns produced are either in dotted lines, or in single or grouped spots, the spots varying in size from that of a mustard seed to that of an almond. They are either round or square, according to the way of tying the knot.

Besides these, there is the *putty printing*, a laborious process, peculiarly Indian in its conception, consisting of designs in putty executed over a dark ground, without the use of the stamper. Then we come to printing in metallic leaf, by which process cloths are printed with gold, silver, copper, or tin leaf. The better patterns are in Upper India. The process is simple.

Dyeing of silk is carried on in Bombay principally by Hindus, who are natives of Sind. The raw silk comes from China, Bengal, and Persia, the first being the most pure in colour, and is strong and lustrous. In the Panjab and Kashmir, woollen fabrics of beautiful colours are extensively manufactured. Dyeing in ivory is a branch of the art which is practised to only a small extent, in Bombay by Parsees, but in Surat and other places by Hindus chiefly. The process is not so complicated as in the other branches of cotton, silk, or wool, and the colours produced are few, only red, deep green, parrot green, yellow, and black being the colours obtained, but fancy colours may be produced by the application of wax as a resist, on the same principle as is done in calico printing.

Europe can no doubt work by cheaper processes. For instance, in the early part of the 19th century, the bandana (bāndhna, to tie) handkerchiefs of India were in great demand, and were there dyed by the knot process. The demand stimulated competition and improved processes in Europe, and presses adapted for them, which could generate a pressure several times greater than 300 tons, so as even to bend the iron sides, which were 6 inches thick. A press cost £4000. They completely superseded the Indian plan of knotting to prevent the colouring matter having access to the cloth.

The following mineral and vegetable dyes are in general use in India and Southern and Eastern Asia:—

Acacia arabica.
A. catechu.
A. rugata.
Acer, *sp.*
Adenanthera pavonina.
Adhatoda vasica.
Adiantum lunulatum.
Alnus, *sp.*
Albizzia odoratissima.
Aleurites.
Ægle marmelos.
Alkanna.
Althæa rosea.
Alum.
Alpinia galanga.
Anacardium occidentale.
Anchusa tinctoria.
Anotto.
Anthemis.
Areca catechu.
Arsenic.
Artocarpus integrifolia.
Avicennia tomentosa.
Baccaurea sapida.
Bunchong bulu wood?
Berberis aristata.
B. Asiatica.
B. lycium.
Betula, *sp.*
Bigonia chica.
Bixa orellana.
Bole Armenian.
Bombax Malabaricum.
Borax.
Borrera ushna.
Bunkita Barring of Borneo.
Butea frondosa, superba.
Cactus Indica.
Cæsalpinia sappan.
Calotropis gigantea.
C. procera.
Calysaccion longifolium,
Carpesium, *sp.*
Carthamus tinctorius,
oxyacantha.
Cassia auriculata.
C. tora.
Casuarina equisetifolia.
C. muricata.
Catechu.
Cathartocarpus fistula.
Cedrela toona.
Ceriops Roxburghianus.
Chavica betle.
Chirongia sapida.
Chromate of lead.
Chulchuliera, mixed lichens.
Cicca disticha.
Cinnabar.
Citrus medica.
Coccolaba uvifera.
Cocos nucifera rind.
Conocarpus latifolia.
Coriara pulicata.
Coscinium fenestratum.
Copper, sulphate of.
Cratæva religosa.
Crocus sativa.
C. Cashmiriensis.
Crizophora.
Cupressus, *sp.*, semper-virens.
Curcuma olnga.
C. aromatica.
C. zerumbet.
Cuscuta reflexa.
Cydonia vulgaris.
Cyperus longus.
C. perennis.
Datisca cannabinus.
Delphinium ajacis.
D. saviculæfolium.
D. speciosum.
Dicalyx tinctoria.
Dolichos pilosus.
Diospyros mollis.
D. glutinosa.
Dracæna draco.
Earth, black.
Elsholtzia polystachya.
Emblica officinalis.
Eugenia jambolana.
Euphorbia tirucalli.
Excœcaria.
Fagopyrum.
Ficus venosa.
Gall-nuts.
Gamboge trees, bark.
Gamboge.
Garcinia elliptica.
G. gambogia and others.
G. mangostana.
G. Roxburghii.
G. xanthochymus.
Gardenia florida.
Geranium nodosum.
Glycirrhiza glabra.
Gmelina arborea.
Gossypium Indicum.
Green earth.
Grisiea tomentosa.
Gutteea of Chittagong.
Gymnema tingens.
G. lacciferum.
H. pictorium.
Hedyotis umbellata.
Hedichium spicatum.
Helianthus annuus.
Hibiscus rosa Sinensis.
Hirmiji earth.
Holigarna longifolia.
Hypericum bacciferum.
H. Cayanense.
Impatiens, *sp.*
Indigofera anil.

DYES.

I. argentea.
I. cinerea.
I. cærulea.
I. disperma.
I. glabra.
I. glauca.
I. hirsuta.
I. pseudo-tinctoria.
I. tinctoria.
Iron, sulphate of.
I. sesqui-oxide.
I. filings.
I. red oxide.
Isatis tinctoria.
I. indigotica.
Jatropha glandulifera.
Juglans.
Justicia.
Ka-bi-ni of Akyab.
Kayu-kudrang of Singapore.
K. luxa of Singapore.
Lac-dye.
Lajward, ultramarine.
Lapis-lazuli.
Laurus cinnamomum.
Lawsonia inermis.
Lead, chromate of.
L. red oxide of, sandur.
L. white, ceruse.
L. yellow oxide, litharge.
Lichens, viz.—
Cetraria glauca.
Cladonia rungiferina.
Gyrophora deusta.
Isidium corallinum.
Lecanora parella.
L. tartarea.
Parmelia borreri.
P. Kamtschadalis.
P. Nepalensis.
P. perlata.
P. sordida.
Pertusaria communis.
Physica leucomela.
Ramalina calicaris.
R. farinacia.
R. vulpina.
R. chlorophorus.
R. dumetorum.
R. utilis.
Ratinara lichen.
Rocella fusiformis.
R. montagnei.
R. phycopsis.
Sticta crygonossa.
Usnea florida.
Lime.
Lithospermum.
Lopisip bark.
Macrotomia euchroma.
Maklura berry of Bankok.
Mallotus Philippinensis.
Mangifera Indica.
Mangkudu of Celebes and Java.
Marsdenia tinctoria.
Melanorrhœa glabra.
M. usitatissima.
Melastoma fruit.
Memecylon tinctorium.
Menispermum fenestratum.
Mergui red-wood.
Mespilus Bengalensis.
Morinda citrifolia.
M. bracteata.
M. tinctoria.
M. umbellata.
M. angustifolia.
M. exserta.
M. tomentosa.
Multani mitti, fuller's earth.
Musa paradisiaca.
Myrica sapida.
Natron.
Nelumbium speciosum.
Nerium tinctorium.
Nipa fruticans.
Nyctanthes arbor-tristis.
Ochre, red, yellow.
Onosma, *sp.*, the havapiva.
Opuntia.
Orpiment, Hartal.
Peganum harmala.
Pentaptera tomentosa.
Photinia dubia.
Phyllanthus emblica?
P. officinalis?
Phyllocladus, *sp.*
Pistacia cabulica.
P. terebinthus.
P. vera.
Polygonum aviculare.
P. barbatum.
P. Chinense.
P. tortuosum.
P. tinctorium.
Potash, impure carbonate.
P. bichromate.
Potentilla Nepalensis.
Prussian blue.
Psychotria root.
Pterocarpus santalinus.
Punica granatum.
Quercus incana.
Q. infectoria.
Rairo of Akyab.
Red-woods of Mergui and Penang.
Reseda.
Rhamnus infectorius, catharticus, virgatus.
Rheum emodi.
R. Moorcroftianum.
Rhizophora.
Rhus.
Ricinus, *sp.*
Rin-nay, Burma.
Rubia cordifolia.
R. tinctoria.
Ruellia indigotica.
Saga bark of Singapore.
Sajji.
Sal-ammoniac.
Saltpetre.
Salvadora oleoides.
Sambucus.
Sapindus emarginatus.
Saponaria, *sp.*
Semecarpus anacardium.
Soda, carbonate of.
Soda, sulphate, reh.
Solanum.
Sophora angustifolia.
Soymida febrifuga.
Symplocos cratægioides.
S. grandiflora.
S. racemosa.
S. paniculata.
S. tinctoria.
Tagetes erecta.
T. patula.
Tamarindus Indica.
Tamarix articulata.
T. dioica.
T. furas.
T. Gallica.
T. Indica.
T. orientalis.
Tanarius major.
Taxus baccata.
Tephrosia apollinea.
T. toxicaria.
T. tinctoria.
Terminalia angustifolia.
T. arjuna.
T. bellerica.
T. catappa.
T. chebula.
T. citrina.
T. paniculata.
T. tomentosa.
The-na bark of Tenasserim.
Thespesia populnea.
Thit-na-myeng of Akyab.
Toddalia aculeata.
Urostigma religiosum.
Vachellia farnesiana.
Vateria Roxburghiana.
Verdigris.
Ventilago maderaspatana.
V. acalyculata.
Wrightia tinctoria.
Xanthorrhiza.

Acacia Arabica, the babul tree; its bark is used for tanning, barking sails, nets, and fishing lines. With sulphate of iron it yields a black colour, and with alum a brown colour, both on cotton and wool.

Of Burmese green dye-plants, the turmeric and the leaves of the soap-acacia, Acacia rugata, afford a beautiful green dye.

Acids obtained from the leaves, flowers, and fruits of the tamarind, mango, the lime and citron, are much employed to assist in fixing the dye on the cloths; safflower is almost always used with an acid of some sort.

Adenanthera pavonina wood dyes red.

Adhatoda vasica leaves in decoction dye yellow. 10 lbs. are bruised, soaked, and boiled in 16 lbs. of water, till half of it evaporate. Alum, lime, and citron juice are the mordants, and the cloth is three times dipped into it. It yields a dark blue with indigo.

Ægle marmelos, the bel, is a cultivated tree; the rind of its fruit is used with myrobalans by calico printers. The rind and the leaves produce bright yellow dyes.

Albizzia odoratissima bark is boiled, in Assam, with the leaves of the dagal tree (Tarcochlamys pulcherrima), and gives a brownish dye.

Alpinia galanga, the Kulinjan. A decoction of its wood is used along with myrobalan.

Alum is largely used as a mordant with the colours yielded by turmeric and madder. Aluminous earth, called chaulu in Mysore, is largely used in dyeing cotton cloth in permanent colours. It is a clay impregnated with alum or soda, or both. Alumina, in combination with a vegetable dye, constitutes the lake class of fast dyes, rendering the original colours more vivid and durable.

Anchusa tinctoria root is the alkanet or dyer's bugloss. In the Panjab, a root is in use as a dye to which the name of alkanet is given. It is probably the root of Onosma emodi, *Wall.*, as other species of Onosma, also Echium rubrum and Lithospermum tinctorium are in Europe and elsewhere substituted for alkanet.

Aniline dyes. Faraday's discovery of benzol in 1825 led to the knowledge of the aniline dyes. By the action of nitric acid, benzol is converted into a dense yellow oil, called nitro-benzol; and by the action of nascent hydrogen, this new compound is transformed into aniline. The names of Unverdorben (1826), Runge (1835), W. H. Perkins (1858), Græbe and Liebermann (1868), and Baeyer (1878), are all honourably connected with the subsequent discoveries of multitudinous colours, with a great increase in the beauty and tinctorial effect of the dyes obtained, and with a diminished cost of their manufacture. At the present time (1883), every colour, and all tints and shades of colours, are produced from aniline. The processes employed and the combinations formed are very numerous, and the commercial names given to the new dyestuffs may be said to be endless. The aniline dyes are cheaper than those obtained from cochineal, madder, safflower, and

turmeric, and are more easily worked. The aniline dye is even finer than that of the safflower, and gives a greater variety of shades. The aniline is, in Europe, displacing the turmeric, as it furnishes a great variety of the shades of yellow. In Europe, the dye from the madder and manjith roots has been largely displaced. In the year 1877, 39,166 cwt. of these two were imported into Great Britain, but in 1881 only 18,129 cwt. Even cochineal is being displaced, as aniline scarlet is much cheaper and quite as fine. The imports of aniline into India for the years ending 31st March were—

1879.	1880.	1881.	1882.
1,145,208 oz.	2,507,794 oz.	3,555,310 oz.	3,095,481 oz.

Arsenic is principally employed in the arts to produce a peculiarly vivid and showy shade of green, which has superseded the less decided tints of nature. The form in which it is generally employed in Europe is that of a green powder, which is commonly known as emerald green, known to chemists and writers on science as Scheele's green, after its discoverer. Another kind is also called Swienfurth green, from a town in Franconia, where it was extensively manufactured on its early introduction. The chemical composition of Scheele's green is—arsenious acid, six parts; oxide of copper, two; acetic acid, one. Yellow orpiment, or hartal, a sulphuret of arsenic, is used in dyeing a yellow colour.

Artocarpus integrifolia is the jack tree; its wood is used for dyeing yellow. The yellow orange colour of the clothes of the phoungye ascetic priests of Burma is obtained from it.

Baccauria sapida, the leteku of Assam, is a small tree. Its bark is used as a mordant with the roots of Morinda angustifolia.

Berberis aristata, B. Asiatica, and B. lycium, all yield the rusot yellow dye.

Bixa orellana yields the arnotto; is used to impart a bright orange colour to silk goods, and to afford a deeper shade to simple yellows.

Bombax Malabaricum is supposed to yield one of the substances known as mochras, small pieces of a dark-brown resinous-looking substance, generally mixed with some fragments of bark. The other mochras is in largish opaque yellow pieces, curiously convoluted, and is supposed to be an exudation from the areca catechu palm.

Borax is occasionally used with turmeric in calico printing.

Butea frondosa and B. superba yield the tisso flowers, which are used to dye yellow.

Cæsalpinia sappan wood, adding lac, and with alum as a mordant, dyes woollen and cotton stuffs of a dark red and shades of red. The chips are soaked for two days in water with lac and alum, and then boiled, and the liquid used as a dye.

Calysaccion longifolium is the suringa of the Bombay Presidency. Its bark and powdered roots are used for dyeing. In Kaira and Surat it is largely used, Surat utilizing 1303 maunds yearly. Its flowers are employed for dyeing silk.

Carthamus tinctorius has small leaves and an orange flower. C. oxyacantha, with larger leaves and a yellow flower, is a native of the Caucasus. They furnish the safflower of commerce. C. tinctorius is cultivated in China, India, Egypt, America, Spain, and the whole of the Indian Archipelago. The flowers contain two pigment principles, one known as safflower yellow, which is extracted by pounding and washing the dried flowers; the other is safflower red, or carthamine, which is the dye of commerce. When a weak soda solution of carthamine is left in contact with oxygen, it first becomes yellow and then red, and on saturating this red liquor with citric acid, red carthamine is thrown down. The affinity of carthamine for cotton and silk is such, that when it is recently precipitated, those substances immediately combine with it, and become at first rose-coloured, and afterwards of a fine red, so that they may be thus dyed without the intervention of the mordant; the stuffs so dyed are rendered yellow by the alkalies, and the colour is to a certain extent restored by the acids. Carthamine is never used in dyeing wool. When it is precipitated from concentrated solutions, it furnishes a liquid paint, which, evaporated upon saucers, leaves a residue of somewhat metallic lustre, used as a pink dyestuff, and which, mixed with finely-powdered talc and dried, constitutes common rouge. Safflower yellow is soluble in water. When the infusion is evaporated, it leaves an extract very soluble in water, precipitated by acids and soluble in alkalies. It is not reddened by oxidizing agents.

Carthamine yields six or seven distinct shades of red, such as pink, rose, crimson, scarlet, etc. In combination with the flowers of Nyctanthes arbor-tristis (harsinghar), it yields a golden orange, a deep orange, and a salmon colour; with turmeric it gives a splendid scarlet and other tints; and when it is combined with indigo, Prussian blue, etc., a series of beautiful purples, a delicate mauve colour, and a deep purple are produced.

The crimson dye is said to attach without the aid of a mordant; but otherwise, of all the more or less beautiful tints produced, scarcely one will stand washing without being fixed with mordants.

From February to May the flowers are picked off each day as they appear, leaving the flower-heads on the stalk. All that is detached is the fragile-looking corolla, which issues from the summit of the prickly teasle-like flower-head. If they be intended for sale to the India dyers, they are simply dried; but if for export to Europe in the form of the safflower of commerce, the florets are damped with water and pressed into lumps. A mat as a strainer is stretched on a wooden frame; on this the lumps of florets are laid, and water is slowly poured over them, while a man treads them with his feet, supporting himself on two sticks as crutches. In this way the yellow colouring is eliminated from the flowers, the presence of which would detract from the beauty of the crimson tint for which they are chiefly prized. When the water comes clear through the strainer, the process is complete. The flowers are then made up by hand into round flat cakes, the water squeezed off, and they are dried in the sun. In this form they are known as the safflower of commerce. Exports from India have been:—

	Cwt.	Rs.		Cwt.	Rs.
1874–75,	14,222	6,50,827	1878–79,	4,977	1,86,711
1875–76,	4,080	1,63,528	1879–80,	...	...
1876–77,	7,662	3,04,672	1880–81,	6,675	3,51,157
1877–78,	3,698	1,48,806	1881–82,	2,293	94,754

Cassia auriculata, the avarai shrub, is common in all the south of India. Its bark is largely used as a tan. It takes the place of oak bark. The flowers yield a yellow colour, and the bark is used with myrobalans as a dye for giving a buff colour to leather.

Cassia tora seeds are used as a yellow dye. They are said also to form an ingredient in dyeing blue with indigo. About seven immersions are required to fix the colour.

Casuarina equisetifolia and C. muricata have been used about 1854 by M. Jules Lépine of Pondicherry, who made an extract from the bark which was fixed by bichromate of potash. With alum as a mordant, it gave a reddish nankeen, and with iron, a black colour. By simple exposure to the air, a nankeen red was produced, which stood the washing well.

Catechu is an extract from the wood of the Acacia catechu. In commerce it is also known as terra japonica, and gambier also is often so named; have been used in India to give a brown dye to cotton; and have been extensively employed in the calico-printing works of England. The salts of copper with sal-ammoniac cause catechu to yield a bronze colour, which is very permanent. The proto-muriate of tin produces with it a yellowish brown. A fine deep bronze hue is also produced from catechu by the perchloride of tin, with an addition of nitrate of copper. Acetate of alumina gives a brown, and nitrate of iron a dark-brown. For a golden coffee-brown, catechu entirely superseded madder, one pound of it being equivalent to six pounds of that root. It is prepared for dyeing purposes by being steeped in water with a little lime; the solution is then strained off, and is ready for use. The dyeing principle is catechene, which is insoluble when oxidized, to effect which, in Great Britain, a salt of copper along with sal-ammoniac is used. From 1877 to 1881, Great Britain imported annually about 30,000 tons of cutch and gambier.

Cedrela toona has white fragrant flowers, which yield a sulphur-yellow and orange. The yellow dye is extracted by boiling in water till three-fourths of the water is evaporated.

Chavica betle is the pan or betle-leaf plant. The leaf is said to be used in Kanouj for colouring the border of chintz made there, called fard-pakhta.

Cinnabar, a sulphide of mercury, the shingarf or vermilion of the bazars, ground and mixed with water, imparts a fresh pink tint to cotton cloth dipped into it.

Cochineal is a foreign dye from the Coccus cacti. The importation into British India of cochineal in 1880-81 was 4182 cwt., and in 1881-82, 2886 cwt. From 1877 to 1881, Great Britain imported about 30,000 cwt. annually. The aniline dyes have not seemingly affected it.

Cocoanut rind produces a dirty brown (khaki) colour. Lime, soda, and alum are used as mordants. The rind is powdered, and soaked for a few days in water, and afterwards boiled. The stuff is washed in this water, and a subsequent wash in lime-water gives the cloth a red tint. For brown tints, lime-water is not used. Dipping in an infusion of myrobalans renders these colours darker and faster.

Copper, sulphate of, is used with lime to produce a shade of light blue, principally in leather-dyeing. Verdigris, a subacetate of copper, the zangar of the bazars, is occasionally used in calico printing.

Coscinium fenestratum, a climber of the western forests of India, grows wild. Its roots and stems contain a quantity of yellow colouring matter similar in property to that of turmeric, and yields its colour to water; sells at 3 to 5 annas the pound in the bazars of S. India. It is used also medicinally.

Crocus Cashmerianus of Kashmir yields the saffron. The saffron of C. sativus, as a cosmetic, is largely imported into India from Europe.

Curcuma zerumbet root, powdered and mixed with the powder of sappan wood, forms one of the abir red powders which Hindus throw about during the holi festival, as with the Confetti at Rome.

Cyperus longus and C. pertennis furnish the nagar-motha roots used by dyers to perfume cloth.

Datisca cannabina roots give a yellow dye.

Delphinium ajacis furnishes the asbarg dye; a decoction of the flowers and stalks give a sulphur yellow dye to silk, known as gandhaki; also used in calico printing. D. speciosa flowers are similarly used.

Diospyros mollis. The celebrated shan black vegetable dye is made from its fruit. It grows on the mountains that separate the province of Tavoy from the Siamese territories. Isolated plants may be seen in the gardens of Tavoy and Moulmein.

Earth. A soft, drab-coloured kind of fuller's earth, called Multani mitti, is used in the Panjab for dyeing cotton cloth various shades of buff and brown. It is also used in lieu of soap for washing the hair and body.

Black mud from the bottom of tanks and old rice swamps, with the gum of Acacia Arabica and myrobalans, is used as a dye to produce a shade of blue-black. It is used alike for coarser cottons, blankets, and carpets, and for the finer silks. The fabric is dipped in the mud and a decoction or infusion of myrobalan.

Emblica officinalis produces the Aonla fruit, which yields a blackish dye. It is pounded and boiled with water, and the cloth is dipped into the decoction to obtain the colour called abunsi, a shade of blue-black. When mixed with myrobalan and sulphate of iron, a black colour is obtained. The leaves are used for tanning leather, and sell at Rs. 4 the cwt.

Eugenia jambolana bark is used as a mordant for blue or black dyes.

Euphorbia tirucalli is the milk-hedge plant of Southern India. Its ashes are used as an alkali in dyeing, and form an ingredient of the red dye with chay-root. It is also said to enter into various other dyeing receipts.

Ficus religiosa. The pipal tree roots are boiled in water, and with alum impart to cotton cloth a very pale pink colour.

Garcinia gambogia. The Toung-tha-lai or Pay-yai-shin of the Burmese, yields a gum-resin which can be dissolved in spirits of turpentine, and affords a beautiful permanent yellow varnish for metallic surfaces.

Garcinia mangostana, the mangosteen. The rind of its fruit is used for dyeing black.

Gardenia florida. In Japan, materials for dyeing are taken from a species of Betula, and from the Gardenia florida.

Glycyrrhiza glabra is the liquorice plant. Its wood is used in calico printing in the Panjab.

Gossypium Indicum, the cotton plant; its flowers are used in the Manipuri district as a yellow dye.

Grislea tomentosa, a shrub of all India, yields the red godari or dhauri flowers, and these and the leaves are used in dyeing,—the leaves in dyeing sheep-skins and leather red, and the flowers (dhauri) in Northern India, along with morinda bark, also as a red dye. In Kandesh the flowers form a considerable article of commerce inland as a dye.

Hedichium spicatum, the Ka-pur Kachri, grows in China and the sub-Himalayan forests. It is made into a decoction along with Charila, Parmelia Kamtschadalis, and Nagor-matha (Cyperus longus), and used in dyeing and calico printing to impart a fragrance to the cloth. It is also used, like camphor, to preserve fabrics from insects.

Hedyotis umbellata of Lamarck is the Oldenlandia umbellata of Linnæus. It furnishes the chay-roots, extensively used by dyers in the south of India. It has been tried in Great Britain, but has not been successful, owing, as it is supposed, to deterioration of the chay-root during the voyage.

Hibiscus rosa-sinensis, the shoe flower. Its rich scarlet flowers yield a purple juice, employed for dyeing a lilac colour, and for blackening leather. It has been found useful as a litmus.

Holigarna longifolia, the Thit-kha-ya of the Burmese, is one of the black varnish trees.

The Indigo of commerce is obtained in different countries from species of Indigofera. Since 1878, an indigo has been chemically produced, but not in commercial quantities. I. tinctoria of India, Mauritius, Madagascar, and St. Domingo, furnishes the largest quantity of indigo. The plants called in India I. anil and I. pseudo-tinctoria are supposed to be varieties of I. tinctoria. It is used principally as a blue dye. From 1850-51 to 1860-61, its export from India ranged in value from £1,734,338 to £2,424,332. In the 7 years 1875-76 to 1881-82, the value of the indigo exported from India has run up to 4½ millions sterling :—

1875-1876,	110,392	cwt.	Rs. 2,87,50,625
1876-1877,	100,384	,,	,, 2,96,27,855
1877-1878,	120,605	,,	,, 3,49,43,340
1878-1879,	105.051	,,	,, 2,96,04,625
1879-1880,	100,923	,,	,, 2,94,72,265
1880-1881,	116,870	,,	,, 3,57,15,814
1881-1882,	150,363	,,	,, 4,50,96,802

In the five years 1877 to 1881, the imports into Great Britain ranged from 58,283 to 81,088 cwt. Manilla indigo is a liquid extract. Formosan indigo is an excellent blue dye, but as imported into China it was much adulterated with earth and refuse sugar. In Peh-chih-li, a very good indigo is sold under the name of king-tien.

Isatis tinctoria, the woad of Europe, yields a blue dye; another species, I. indigotica, is named as a plant of Shang-hai and Chusan; and I. tinctoria, under the name of tien-tsing, is also said to be cultivated in China.

Iron oxide, with myrobalans, as with tannic and gallic acids, produces black. Sulphate of iron gives a black dye, and is very extensively used in combination with sugar (goor), and sometimes with myrobalans. It is also used with other substances for various colours. With myrobalans it produces a greyish, purplish black dye.

Iron, impure sesquioxide, in the form of geru or red ochre, is abundant in many parts, and is extensively used by Hindu devotees for dyeing their cloths of a dull orange colour; and is used largely by dyers for several other colours. The earth is simply powdered and mixed with water, into which the cotton cloth is fixed. Red ochre of a lighter colour than geru, is known as hirmji; and yellow ochre (hydrated sesquioxide of iron) is occasionally used as a dye, under the name of ramraj, also called zard or pili mitti.

Jatropha curcas, the physic nut. Its juice or oil boiled with oxide of iron dyes black.

Jatropha glandulifera grows wild throughout India, and its leaves are said to yield a green dye of great beauty for cotton cloths.

Justicia, *sp.* According to Mr. Fortune, near Ningpo, a bastard species of Justicia furnishes much indigo. The plants being thrown into pits in the open field, and filled with water, after the rotting of its herbage, lime is added, and the liquid thoroughly mixed up and beaten; the water is then drawn off, leaving the thick indigo paste at the bottom to dry, preparatory to being packed in bamboo baskets. The froth rising upon these pits of liquid is collected and made into an extract, called tien-hwa or ts'ing-tai, in imitation of a powder formerly brought from Persia, and in great repute as a paint, and a specific medicine.

Ka-bi-ni of Akyab is used to tinge fishing nets a brown colour.

Khandelia Rheedii of Tavoy; its bark is used to dye cotton thread of a dirty red colour.

Lac. Coccus lacca, the lac insect of India, is found on many trees, but the best of its produce is on the Butea frondosa, Ficus religiosa, and the Schleichera trijuga, and Vatica laccifera. When the female is about to lay her eggs, she secretes a pellucid and glutinous substance from the margins of her body, which in the end covers the whole insect as with a cell. When hardened by exposure to the air, this substance becomes of a more or less deep red or orange colour, hard and translucent. This is lac in a crude state, and it often entirely covers a branch. The lac or resinous incrustation is separated from the wood, converted into shell-lac, and cakes of lac-dye formed. It has always had competitors with cochineal and other dyestuffs, but the aniline dyes have now almost driven the lac-dye out of the market. The quantities and values of the exports from India of lac and its products were as under :—

	Cwt.	Rs.		Cwt.	Rs.
1875-76,	103,583	75,57,474	1878-79,	91,423	29,87,157
1876-77,	128,712	53,69,764	1879-80,	71,048	37,14,959
1877-78,	104,645	36,20,481	1880-81,	...	57,83,202

In the five years 1877 to 1881, Great Britain imported from 51,159 to 104,273 cwt. of shell-lac, seed-lac, and lac-dye.

Laurus cinnamomum, tejpat; its leaves are used with myrobalan.

Lawsonia inermis. Mahomedan women in Asia use the leaves and shoots for dyeing their nails red, also the palms of the hand and the soles of the feet. The leaves are beaten into a pulp with rice-water, and in that form applied, and the following morning washed off. The manes and tails of the horses are stained red in the same manner; some men dye their beards.

Lichens of the mountains of Ceylon, the Neilgherries, the Koondah hills, and the Himalayas furnish dyestuffs.

Parmelia perlata, P. Nepalense, a yellow dye, and P. borreri, a deep brown dye. Sticta orygonosse and several other species give a beautiful pink dye. Ramalina farinacea is used for food; Ramalina vulpina yields a fine deep yellow dye.

Lichens of the Kondahs are the Cetraria glauca and another species, Lecanora Tartarea, Gyrophora deusta, Cladonia rungiferina.

At the Exhibition of 1851, the Parmelia perlata sent from the Neilgherries and Ceylon was valued at from £195 to £225 per ton; and the Rocella fusiformis sent from Ceylon at £380 the ton.

The Chulchuliera of the Panjab is a mixture of dye lichens, the Parmelia Kamtschadalis, P. perlata, and its variety P. sorediata; Usnea florida, Ramalina calicaris, and Physica leucomela.

Lime is used in calico-printing in combination with gum as a resist paste. It is also employed with sugar to excite fermentation in indigo, and convert it into indigo white, in the presence of hydrogen.

Madder dyestuff of Europe and Western Asia is the roots of the Rubia tinctorium, and yields the well-known Turkish red. The madder used in India is from the Rubia cordifolia, locally known as the manjith. Turkey madder roots at one time realized about 20s. or 30s. the cwt., and manjith somewhat less. During the 11 years 1850-51 to 1860-61, the value of the manjith exported from India ranged from £10,694 to £34,379. The sale of both these plants has been very greatly affected by the discovery of the aniline dyes. Great Britain has diminished its imports of them as under, in cwts.:—

1877.	1878.	1879.	1880.	1881.
39,166	33,061	21,463	22,375	18,129

Mallotus Philippinensis furnishes the kapli or kamela, extensively used in India as an orange dye, principally for silk and wool. It is in the form of a red mealy powder on the capsules, which are gathered in March, and rubbed together, trodden on, or shaken in bags till the farina separates. Four parts of the powder, one of powdered alum, and two of carbonate of soda, are rubbed well together with oil of sesamum, and then boiled in water, into which the silk is dipped. It is, however, sufficient to mix it with water alone, or with water containing half its weight of carbonate of soda. It does not require a mordant. It also produces in the N.W. Provinces a rich flame colour of great beauty and permanence. Colonel Beddome says that some of the powder, carefully collected by the Forest Department, brought a high price in England. The bark is used for tanning.

Marsdenia tinctoria, a native of Sylhet and Burma, is cultivated in Northern India. Its leaves yield more and superior indigo to the Indigofera tinctoria.

Mica, in a roughly powdered form, is used by dyers and washermen to sprinkle on cloth to give it a sparkling appearance.

Morinda citrifolia, M. bracteata, M. tinctoria, and M. umbellata are dye plants common in India and eastwards to China. The dyestuff is obtained both from the roots and the bark. M. bracteata contains in its bark two colours, yellow and red, changing to crimson by the application of alkalies. In many places the roots of the M. umbellata are employed instead of chay-root in dyeing cotton yarn red. The colour is neither so bright nor so durable. Dr. Heyne thus describes the process. Take 3½ pounds of white cotton yarn and soak it in 1½ pound of gingelly oil; a strong lye made of the ashes of the milk-hedge, and the yarn steeped in it for four nights, being dried in the sun during the day; it is then washed in brackish water, and dried in the sun. Or 5 seers (kutcha, 13¼ pounds?) of togara root, M. citrifolia, finely powdered, are put into a pot of water together with the yarn, and kept all night over a fire of cow-dung. In the morning it is taken out and dried in the sun. The same process is repeated for two successive days and nights, which completes the process.

The red dye obtained from the roots of the M. citrifolia is in general use for dyeing the yarn of the native cloths, both silk and cotton, and better single colours of the kind are rarely seen. The use of a mineral mordant in the native process is unknown, and, with the exception of weak lye made from the ashes of some jungle plants, no other application is made beyond the simple solution of the extract from the wood itself. Most of the Madras red turbands are dyed with the bark and root of M. citrifolia; it yields three permanent shades, a bright red, a pink red, and a faint red. The plants are cultivated and come to maturity in three years; the roots are then dug up and sorted into three kinds, according to the fineness of the fibres. The fibres are then cut and beaten down well, and afterwards ground to powder, which latter is used for the dye.

Morinda umbellata grows wild throughout South-Eastern Asia. The bark of the roots of plants three years old gives the best dye. It is one of the commonest of the red dyes of India; though the colour is dull, it is considered faster than the brighter tints obtained from other substances.

Melanorrhœa usitatissima is the black varnish thit-tsay tree of Burma, used to lacquer boxes. M. glabra is similarly useful.

Melastoma Malabathricum and M. macrocarpum are shrubs of South-Eastern Asia; their berries are used to dye black.

Memecylon tinctorium; a cold infusion of its leaves gives a yellow colour. It is used for dyeing cotton cloths and grass mats. It also forms an ingredient of the dyes obtained from sappan wood and myrobalans, and it is likewise used with the chay-root, Hedyotis umbellata, as a red dye.

Mergui red-wood is valuable for both black and red, but more especially for orange. The colours imparted to silk, with different mordants, were as follows:—

1. Muriate of tin, 3 shades of orange, varying with the temperature of the bark and the time of immersion.
2. Acetate of alumina, 2 shades of flame colour.
3. Acetate of iron, 2 shades of drab.
4. Acetate of iron with a decoction of galls, a fine black of two shades.
5. Mixed with manjith, a variety with red and pink are obtained, but not equal to manjith alone.

Nyctanthes arbor-tristis flowers are dried in the sun and kept for use. They are then boiled in water, 1 pound to 10 gallons, evaporating 9 gallons. The fabric is dipped into it, and is dyed of a fine orange yellow; but it is a fleeting colour.

Parmelia Kamtschadalis, the Charela lichen of the Himalayas, is used as a perfume in calico printing, price Rs. 5½ the cwt. P. caperata, P. perlata, and P. physodes are known.

Pentaptera tomentosa, a tree of the Cuddapah and Kurnool forests. The bark is used with iron for dyeing black.

Phyllanthus emblica bark is used as a tanning

substance for barking sails, nets, and lines. Its fruit is used in dyeing black.

Pistacia vera flowers, called buznak, are used in the Panjab and N.W. Provinces in silk-dyeing, as also are the galls formed on this plant.

Polygonum Chinense, P. barbatum, and P. aviculare all produce a beautiful blue colour, much like that from indigo. The leaves are first dried, then pounded, and made into small cakes, which are sold in the shops. Three cuttings of P. tinctoria are obtained in China annually. It has been introduced into Belgium. It has red flowers.

Potash is used in extracting the crimson dye from safflower, and also occasionally in calico printing. It is usually obtained from the stalks of the Penicillaria spicata or bajra.

Punica granatum or pomegranate. An infusion of the root bark yields a deep blue precipitate with salts of iron; a yellowish-white one with a solution of isinglass; a greyish-yellow one with corrosive sublimate, and potash or ammonia colours it yellow. A light red dye is produced from the flowers. The rind of the fruit is ground and boiled, and the concentrated decoction is used alone in dyeing cloth a greenish brown or khak-rezi colour. The cloth is simply dipped in the decoction. But it is more generally used along with some other dye as a colour concentrator, in which case the rind is boiled along with the other dye. It is used for fixing the colour of turmeric in yellow and orange shades, and turmeric with indigo for the various shades of green.

Psychotria. The wood of the jack, the root of the psychotria, the bark of the gamboge trees, the flowers of the butea, the rind of the Bengal quince, the leaves of the memecylon and the touk-yat, all produce bright yellow dyes.

Pterocarpus santalinus. Red sanders wood is hard and of a bright garnet red colour, and is employed to dye a lasting reddish-brown on wool. It only yields its colour to ether or alcohol. The exports of this wood from Madras in one year amounted to nearly 2000 tons. Price, £6 to £9 the ton.

Quercus infectoria and other species yield the gall or dyers' nut-oak. Q. infectoria is called the gall oak, because the gall or nut-gall is produced on it. It is a native of the countries from the Levant to Kurdistan, and is supposed to yield the product known as Mecca galls, E. I. galls, and Bussora galls.

Randia dumetorum fruit, the main-phal, is used in calico printing as a colour intensifier.

Rhamnus catharticus is the buckthorn of Europe and Asia. Its foliage and bark can be employed for the preparation of a green dye. R. chlophorus, *Lindley*, and the R. utilis of China, furnish a superior green pigment for silk.

In 1848, M. de Montigny, consul at Shang-hai, forwarded to the Minister of Commerce green cottons named Liou-sai (that is, cloth dyed with the dye produced by the tree liou). Father Helot stated that these cottons are commercially known by the name of Se-lo-pou (green-coloured cloth) when dyed with the bark; Ngheou-lose (water lily green colour) and Ngheou-lo-pou (water lily green cloth), that is to say, dyed of the colour of the leaves of nymphæa, when they have been dyed with the Lo-kao. The cost of dyeing in green a square metre (39 inches and a fraction) of cotton stuff, either with the bark or the Lo-kao, is about 50 centimes (about 6 annas and 5 pies). M. de Montigny sent at the same time 10 catties (about 13 pounds) of Pih-chow-elle (green colour), cost 4950 sapecs (about 10 rupees 6 annas), 50 catties (about 65 pounds) of Tong-loh, a green paint said to be prepared from the seed of No-me, cost 20,800 sapecs (about 42 rupees 4 annas).

Rheum Moorcroftianum, the rhubarb root, is used to obtain a yellow on woollen and silk.

Rhizophora mangle, the mangrove bark, in Arakan yields a dye of a chocolate colour. A decoction of a mangrove bark of Penang is said to produce a deep black in material previously dyed blue. Mangrove bark is extensively exported to China as a tanning substance.

Rin-nay, of the Burmese, is used for dyeing phoungye (priests) clothes with yellow orange colour.

Rubia cordifolia supplies the Indian manjith of commerce, and R. tinctoria the madder, both of them yielding a red dye. See Madder.

Ruellia comosa, of Assam, the mai-gyee of Burma and Tenasserim, furnishes the blue room dye, which is prepared after the manner of indigo. It grows wild. R. indigotica is the Tien-ching of China, where it is grown for its blue dye. R. indigofera is cultivated in Burma for local use as a blue dye. Its yield is about 8 cwt. per acre.

Saltpetre in solution is used in wool-dyeing.

Saffron, from the Crocus sativus of Europe, is largely imported into India as a cosmetic. Saffron from Kashmir, from its price, is prohibitive as a dye; it is used as a drug and cosmetic.

Semecarpus anacardium is the marking-nut tree; the juice of the nut is used for marking cloth.

Soda salts, in the form of impure carbonate or sulphate of soda, are used as detergents, for washing cloth as a preliminary in calico printing. These salts, efflorescing on the surface of the ground, have rendered tracts of land in Hindustan uncultivable. A carbonate of soda, called rassi, is prepared from the reh efflorescence, by dissolving it in water and allowing foreign substances to settle.

Sajji is a mixture of the carbonates of soda and potash. It is made by dissolving wood-ashes and reh in water, and exposing the solution to the sun for several days. It is used in extracting the crimson dye from safflower; also in bleaching.

Soymida febrifuga is used to produce one of the khaki or dirty browns of which cotton stuffs are often dyed; it is used also along with more valuable arnotto and kapila.

Strobilanthus flaccidus, the rampat of India, is a small shrub. Its leaves and twigs are boiled in water with the yarn to be dyed red, which, however, is not a permanent colour.

Symplocos racemosa, S. grandiflora, S. paniculata, bark and leaves, yield yellow dyes. The bark is used in calico printing and leather-dyeing, and as an auxiliary to other dyes; they are used with madder.

Tagetes erecta and T. patula, the marigolds; their flowers soaked in water yield a yellow dye, when squeezed out by the hand. Common people use it for their house clothing. The shades of yellow are called gendia and champai.

Tamarisk galls, from Tamarix articulata, T. orientalis, and other species, are known to the Indian dyers and calico printers as the main.

Tephrosia apollinea, of Nubia, and T. toxicaria, of the Nile.

Terminalia. Several species of this genus produce the commercial myrobalan fruits or nuts, which yield with alum a good durable yellow, and with salts of iron a black colour. Those of T. bellerica are used for dyeing cloth, also in tanning.

The bark and leaves of T. catappa are astringent, and with salts of iron yield a black pigment.

A decoction of the bark of T. chebula is employed in tanning leather, and is used as a mordant in dyeing. Its nuts, when mixed with alum, yield a dye which chintz printers and carpet-weavers consider their best and most durable yellow. Along with ferruginous mud, it gives a good and durable black dye; and the outer coat of the rind with sulphate of iron yields a black dye, which is used by dyers and harness-makers. It forms an ingredient in dyeing red, along with sappan wood. All the madder-dyed cloths are first steeped in it. The dyers pound the outer rind of the fruit, and mix it with water; the cloth is simply dipped into this mixture. The colours obtained are black with sulphate of iron, green with turmeric, dark blue with indigo, and brown along with catechu. It is used more as a concentrator of colour than as contributing much colour of its own.

The nut of T. chebula is the most valuable. The fruit consists of a white pentangular nut, of which the shell or covering is used both by dyers and tanners.

Terminalia arjuna. The inner bark is broken into chips, and the dye extracted by boiling. It is one of the barks employed in producing the khaki brownish colour on cotton cloths. If the cotton yarn or cloth has been previously dipped in a mordant solution of alum and myrobalans, a darker fast colour is produced.

In 1880-81, India exported 315,628 cwt., value Rs.12,37,087, and in 1881–82, 391,566 cwt., value Rs.14,44,925.

Thit-na-myeng of Akyab dyes yellow, and with oil and lac, a red colour is obtained.

Toddalia aculeata is a common shrub of the Peninsula. Its root has a yellow wood and yellowish corky bark, which yield their colour to water. It is supposed to be the lopez root formerly famed in Europe. The root-bark sells at 3 to 5 annas the pound.

Turmeric dyes a dirty yellow with an alkaline earth.

Vateria Roxburghiana yields the piney varnish.

Ventilago acalyculata is said to be a native of Central and Northern India, and V. maderaspatana is found in Ceylon and the Indian Peninsula and Burma, and is employed by the native dyers to produce an orange-red dye. These two plants were for long confounded one with the other, and it is not yet known whether V. acalyculata is as rich in dyestuff as that of V. maderaspatana, which furnishes the puplay chukkay of the Tamil and the rakta pita of Bengal. V. maderaspatana is a climber. Its root-bark, combined with Hedyotis umbellata, yields a beautiful chocolate colour or brownish-purple, and with galls a black dye. It sells at 3 to 5 annas the pound. Its colouring matter occurs in the roots and wood of the plant. It is used in Bangalore by the carpet-weavers. The dye is extracted by boiling the chips of the wood in water. Simple dipping in the solution imparts the dye, but the colour is fleeting. If the cotton yarn or cloth have been previously dipped in a mordant solution of alum and myrobalans, a darker colour, which is fast, is produced. —*Roxb.; Ainslie; Crawfurd; Mason; Tomlinson; M'Culloch; Simmonds; Fortune; Exhibitions*, 1851, 1862; *Birdwood, Veg. Prod.; Maritime Commerce; Stat. Abst.; Poole's Stat. of Comm.; Ure's Dictionary; Annual Statement of Trade.*

DYNASTIDÆ. *Macl.* This insect family of dung-beetles is represented by the genera Oryctes, *Illig.*; Xylotrupes, *Hope*; Phileurus, *Latr.*; Orphnus, *Macl.*, in India.

DYSOXYLON. One species, of Java, yields a fruit used as garlic. D. Championii is a great tree of the central province of Ceylon, found up to an elevation of 4000 feet.—*Thw.* D. procerum, a timber tree of Assam. D. multijugum, *Arn.*, Guarea paniculata, *Roxb.*, a tree of Chittagong and Tiperah.—*Roxb.* ii. p. 240.

DYSOXYLON MACROCARPUM. *Bl.*
Guarea binectarifera, *Roxb.* | Amoora ficiformis, *W. Ill.*

A great tree of Ceylon, found in the central province, up to an elevation of 3000 feet, and at Batticaloa.—*Thw.* p. 60.

DYTISCIDÆ. *Macl.* This insect family of aquatic coleoptera in India is represented by the genera Cybister, *Curt.*; Dytiscus, *Linn.*; Eunectes, *Erich*; Hydaticus, *Leach*; Colymbetes, *Clairv.*; Hydroporus, *Clairv.*

DYUPETIR, a name of Indra, seemingly the origin of the name Jupiter, perhaps from Jiva, life, and Pitra, father. Dyupetir may, however, be from the words Deo, god, and Pitra, father, or from Div, the sky, and Pitra, father. See Dyaus.

DYUTA. SANSK. Gambling with dice, chess, etc., or betting on cocks, rams, etc. Dyuta-pratipad, also Dyuta-purnima, in Hinduism, is the night of the last day of the light half and eve of the first day of the dark half of the month Kartik, which is to be spent in gambling in honour of Lakshmi, the goddess of fortune.—*Wilson.*

DZAT. BURM. An open shed near a Burmese pagoda.

DZU NAWAZ, A.D. 490–525, a Himyarite king of Yemen, who visited Medina (Yathrib), of which half the population were Jews, and he became a convert. He invaded Nejran, and destroyed 20,000 Christians, throwing them into a blazing trench. —*Koran Sura*, 85; *Muir*, i. 162.

DZUTU. TEL. The scalp-lock of Hindu men.

E

E. This letter in the English language has three distinct sounds, as in the words here, her, and there. In Sanskrit, the e is always long; and the sound of the Arabic e can be better indicated by the English letter y; but to imitate the sounds of some of the e letters of the languages of South-Eastern Asia, the English e has to be duplicated, thus, ee. To obtain, by means of the English e, its sound as in there, the e is usually accented, as in Véda. In the languages of Southern India, and in Malealam and Tamil especially, the initials e or a are very commonly pronounced as if preceded by an initial y, B-A as B-yea.

E character in the Chinese tongue means a barbarian, and is applied by them to all foreigners, as the Hindus apply M'hlecha, the Greeks and

Latins, Barbaros and Barbarus, as Jews used Gentile, and as Arabs use Ajam. In the 50th article of the British treaty with the Chinese, it was stipulated that E should not be used to designate the people of Britain. Yuen is another Chinese term for foreigner, the exact meaning of which has not been mentioned; and the term Hung-mou-yin, red-bristled man, was also applied to the British.

EA of the Chaldees is Schalmann, the saviour. Ea is, moreover, the Oannes, lawgiver, of the fragments of Berosus in the sculptures of Assyrian palaces and on cylinders, the Euahannès of Hygin, and the Oes of Helladios.

EAGLE.

Nesr, ... Arab.	Nisr, ... Heb.
Neshr, ... Chal.	Sherza, ... Hind.
Aigle, ... Fr.	Aquila, . . . It., Sp.
Adler, ... Ger.	

The eagles, the Aquilinæ, are arranged by naturalists as a sub-family of the Falconidæ, of the order Raptores, or birds of prey, the Accipitres of Linnæus, and the Rapaces and Raptatores of other authors. Dr. Jerdon arranges the Aquilinæ into five groups, viz. True Eagles, Kite Eagles, Hawk Eagles, Serpent Eagles, and Fishing Eagles. They are birds powerful in flight, and are often named in Scripture. Job xxxix. 27 says:

> 'Is it at thy voice that the eagle soars,
> And therefore maketh his nest on high?
> The rock is the place of his habitation.
> He abides on the crag, the place of strength.
> Thence he pounces upon his prey.
> His eyes discern afar off.'

1. True Eagles.

(a) *Aquila chrysaetos*, Linn., Golden Eagle.

Falco niger, *Gmel.*	Aquila daphsenia, *Hodgson.*
F. melanonotus, *Lath.*	A. nobilis, *Pallas.*

The golden eagle is found over the greater part of northern and central Europe, Asia, and America; it is, however, rare in India, and only in the Himalaya, for in Oudh and the N.W. Himalaya it is the lammergeyer to which Europeans give the name of golden eagle. It is named Berkut and Bjurkut by the Mongols, and is the Bearcoote which Atkinson notices in his travels. It is 3 to 3½ feet long; and the Kirghis and other Mongol tribes train it to kill antelopes, foxes, and even wolves. It is carried on a perch betwixt two men, or on a horse.

(b) *Aquila imperialis*, Bechst., Imperial Eagle.

Aquila mogilnik, *Gmel.*	A. Nipalensis, *Hodg.*
A. heliaca, *Sav.*	A. chrysætos, *Jerdon.*
A. bifasciata, *Gray, Hard.*	
Frus, ... Beng.	Jumiz, Jumbiz, . . Hind.

The imperial eagle is found throughout the Himalaya, is not uncommon in Central India and on the table-land, but is rare in the south of India. It commences to seek its prey about an hour after sunrise, hunting slowly at no great elevation over bushy valleys and ravines, and occasionally over cultivated ground, pouncing on hares, florikin, rats, lizards, etc., but will eat carrion.

(c) *Aquila nævia*, Gmel., Spotted Eagle.

Aquila melanætus, *Sav.*	A. vittata, *Hodg.*
A. clanga, *Pall.*	
Bukayari Jiyadha, Beng.	Nalla-gedha, . . . Tel.
Kal-janga, . . . Hind.	

The spotted eagle is found throughout India, N. Africa, Western Asia, and the S. of Europe, and is tolerably common in the Karnatic and in Malabar. It prefers the vicinity of cultivated places; it lives on small animals,—rats, squirrels, lizards, and frogs.

(d) *Aquila fulvescens*, Gray, Tawny Eagle.

A. punctata, *Gray, Hard.*	A. vindiana, *Frank., Jerd.*
A. fusca, ,, ,,	A. nævioides, *Blyth.*
Wokhab, ... Hind.	Dholwa of the . Wagri.
Ali, ... Tam.	Bursawul of the Yerkala.
Alawa, Salwa, . . Tel.	

This resembles the imperial eagle in miniature. It is found in a great part of India, is very abundant in the Dekhan, but is unknown in Malabar, Bengal, and to the E. of India. It prefers dry open plains. It quests slowly over fields, and feeds on hares, partridges, rats, lizards, and occasionally enters villages and towns and carries off chickens and ducklings. It pursues and robs kites, falcons, and other birds of prey. Its feathers are used for feathering arrow-shafts.

(e) *Aquila hastata*, Less., the Long-legged Eagle; Spizætus punctatus, *Jerd.*

Jiyada, Gutimar, Hind.	Phari Tisa, . . . Hind.

This eagle is not common. It robs birds' nests.

(f) *Aquila pennata*, Gmel., Dwarf Eagle.

Spizaetus milvoides, *Jerd.*	Butaquila strophiata, *Hod.*
Aquila minuta, *Brehm.*	
Baghati Jumiz, . Hind.	Punja Prandu, . . Tam.
Gilhri mar, . . . ,,	Oodatal gedda, . Tel.

This eagle is found in W. Asia, N. Africa, and S. Europe, and throughout India, frequenting groves of trees, gardens, and cultivated land, and pouncing on squirrels, rats, doves, pigeons, chickens. Hens with chickens readily recognise it, and call their young to them. Crows often pursue it out of their bounds.

2. Kite Eagles.

(g) *Neopus Malaiensis*, Reinwardt, Black Eagle.

Aquila perniger, *Hodgs.*	Nisaetus ovivorus, *Jerd.*
Heugong, . . . Bhot.	Adavi nalla Gedda, Tel.
Lahmong Bong, . Lepch.	

This eagle is found in most of the hilly and jungly districts of India, of Burma and Malayana. It is generally seen circling or questing for prey at no great height. Its chief food is obtained by robbing birds' nests of the eggs and the young.

3. Hawk Eagles.

(h) *Nisaetus Bonelli*, Temm.

Nisaetus niveus, *Jerd.*	Aquila intermedia, *Bon.*
Mohr-angah, . . Hind.	Rajale, ... Tam.
Mohr-angi, . . . ,,	Kundeli salawa, . Tel.

This eagle is about 27 inches long, and is found throughout India in the hilly and jungly districts. It preys on game birds, and peafowl, ducks, herons, and waterfowl, also on tame pigeons. Dr. Jerdon thinks it could be trained to hunt hares, antelopes, fawns, and bustard.

(i) *Limnaetus niveus*, Temm.

Falco limnaetus, *Vigors.*	Nisaetus pallidus, *Hodgs.*

This small eagle occurs in Bengal (Sadal), and north to the Himalaya, and easterly into Burma, Malayana, and the Archipelago.

(j) *Limnaetus cristatellus*, Temm.

Falco Lathami, *Tick.*	F. cirrhatus, *Gmel.*
Shah Baz, . . . Hind.	Jutu Bhairi, . . . Tel.

The crested hawk eagle is found throughout Central India, the Peninsula, and Ceylon, and is said to inhabit the Himalaya, Kamaon, and Bhutan.

It sits on a high tree, and pounces on hares, partridges, young peafowl, jungle-fowl, etc.

(k) *Limnaetus Nipalensis*, Hodgs., Spotted Hawk Eagle.

Nisaetus Nipalensis, *Hodg.*	Falco orientalis, *Temm.*
N. pulcher, ,,	
Reijore, ... Bhot.	Kanzha Cheel, . . Lep.

This has been found in the Himalaya, Khassya Hills, and Ceylon. It kills pheasants, partridges, and other small birds.

(l) *Limnaetus Kienierii*, De Sparre, Rufous-bellied Hawk Eagle, Spizactus albogularis, *Tickell.* This is rare in the Himalaya and Central India.

(m) *Limnaetus caligatus*, Horsf., is a dark-coloured bird of Malacca.

4. Serpent Eagles.

(n) *Circaetus Gallicus*, Gmel., Serpent Eagle, C. brachydactylus, *Meyer.*

Sap mail, . . . Beng.	Pamula-gedda, . . Tel.
Mal-patar, ... Can.	Rawul of the . Wagri.
Samp-mar, . . . Hind.	Kendatele of the Yerkala.
Pambu prandu, . Tam.	

This serpent eagle is found in the south of Europe, N. Africa, all over India and Asia, and prefers the open ground, questing like a harrier. It eats any creature, but snakes and lizards are its chief food, hovering in the air, and pouncing suddenly like a stone down. It seizes with its talons the snake by the back of the head, and the snake often twines its body around the bird, and encumbers it.

(o) *Spilornis cheela*, Daud.

Falco albidus, *Cuv.*	Circaetus Nipalensis, *Hod.*
F. undulatus, *Vigors.*	Buteo bacha, *Franklin.*
Circaetus undulatus, *Jerd.*	B. melanotus, *Jerd.*
Tilai baj, Sab cheer, Beng,	Botta genda, . . Gond.
Furj baj,. . . . ,,	Murayala, . . . Mahr.
Goom, ... Can.	Nalla pamula gedda, Tel.

The crested serpent eagle is found all over India, in Assam, and Burma. It lives on snakes, lizards, rats, frogs, and insects.

(p) *Spilornis bacha*, Daud., from Java and Sumatra; is the Falco bido of Horsfield.

(q) *Spilornis spilogaster*, Blainv., from Ceylon and S. India.

(r) *Spilornis holospilus*, Vigors, is from the Philippines.

5. Sea Eagles or Fishing Eagles.

(s) *Pandion haliætus*, L., Osprey; Fish Hawk.

Pandion Indicus, *Hodgs.*	Pandion fluvialis.
Mach moral, Bala, . Beng.	Pantiang, . . . Lepch.
Mach manga, . . ,,	Verali adi pong, . Tam.
Machariya, . . . ,,	Koramin gedda, . Tel.
Macha-rang, . . . Hind.	Hegguli of . Yerkala.

The fish hawk of Europe, Africa, and Asia, is spread all over India; abundant near the coast, and along marine lagoons. It plunges from a great height into the sea, and carries off a goodly-sized fish, but is frequently robbed by the Haliætus leucogaster. P. leucocephalus, *Gould*, occurs in Australia.

(t) *Polioætus ichthyœtus*, Horsf., White-tailed Sea Eagle.

Pandion lineatus, *Jerd.*	Ichthyœtus lucarius, *Hodg.*
Ichthyœtus bicolor, *Gray.*	Haliætus plumbeus, *Hodg.*
I. Horsfieldii, *Hodgs.*	
Mach morol, . . Beng.	Madhuya, . . . Hind.

This eagle is rare south of the Nerbadda, but common in Hindustan, Burma, and Malayana. It lives chiefly on fish, but will carry off a teal or wounded duck.

(u) *Polioætus humilis*, Temm., a miniature of the last; is found in Malacca and the islands. It is the I. nanus of Blyth.

(v) *Haliætus fulviventer*, Viell., Ring-tailed Sea Eagle.

Falco Macei, *Temm.*	Haliætus unicolor, *Gray.*
Haliætus Macei, *Bl. h.*	H. lanceolatus, *Hodgs.*
H. albipes, *Hodgs.*	
Macha rang, . . . Beng.	Koral, ... Beng.
Mach manga, . . ,,	Bala, ... ,,
Mach korol, . . . ,,	Kokna, Ugus, of the Kol.

The ring-tailed sea eagle is found throughout the N. of India, along the Ganges and Indus up to Kashmir. It lives on fish, turtle, and snakes.

(w) *Haliætus leucogaster*, Gmel., Grey-backed Sea Eagle.

Blagrus leucogaster, *Blyth.*	F. dimidiatus, *Raffles.*
Ichthyœtus cultrungis, *Bl.*	F. maritimus, *Gmel.*
Falco blagrus, *Daud.*	

This sea eagle is found throughout India, in Burma, Malayana, and Australia, chiefly on the coast and near the mouths of rivers. It lives on sea-snakes, crabs, rats, and on fish which it picks up on the beach.

(x) *Haliætus leucocephalus* is of N. America and N.E. Asia.

Aquila nœvioides, the tawny eagle, is a native of Asia and Africa, extending into southern Europe. It is nearly allied to the imperial eagle. The white-headed sea eagle is the adopted emblem of the United States of America. The wedge-tailed eagle of Australia, Aquila audax, preys indiscriminately on all animals,—lambs, the kangaroo, bustard. Haliætus leucogaster is the Australian sea eagle. Bateleur eagle, Helotarsus caudatus, is of Africa.

The eagle takes a part in the mythology of the Hindus. The allegory of Krishna's eagle pursuing the serpent Buddha, and recovering the books of science and religion with which he fled, is an historical fact disguised, namely, that of Krishna incorporating the doctrines of Buddha with his own after the expulsion of the sect from India. The Gulf of Cutch, the point where the serpent or Takshac race attempted to escape, has been from time immemorial to the present day the entrepôt for the commerce of Sofala, the Red Sea, Egypt, and Arabia. There, Buddha Trivicrama or Mercury has been, and is yet, invoked by the Indian mariners, especially the pirates of Dwarica; and whether Buddha or Mercury came from or escaped to the Nile, whether Buddha Trivicrama be the Hermes of Egypt, to whom the four books of science, like the four Vedas of the Hindus, were sacred,—the statues of Nemi, the representative of Buddha exactly resemble in feature the bust of young Memnon, and the Buddhists appeared in the Gujerat Peninsula, and the adjacent Indian continent was the cradle of Buddhism, and in Saurashtra are three of the five sacred mounts of the Buddhist faith, *i.e.* Girnar, Satrunja, and Abu.—*Jerdon, Birds of India; Tod's Rajasthan.*

EAGLE STONES. The Grecks believed that the eagle stone or ætiles were only found in the nests of eagles. The eagle stone bore some analogy to the toad-stone. Pliny stated that a round perforated stone, if found in an eagle's nest, will

prove to be a specific against disease, and a charm against shipwreck and other disasters. Eagle stones are the Hajar-ul-akab of the Arabs, who describe them as resembling tamarind stones, but hollow, and found in eagles' nests, and believe that the eagles bring them from India.—*King.*

EAGLE-WOOD.

Agalugen, . . . ARAB.	Ud-i-Bukhoor, HD., PERS.
Ugoor, ... BENG.	Ud-i-Kimari, ,, ,,
Chin-hiang, . . . CHIN.	Ud-i-Samudri, ,, ,,
Ag'r, ... DUKH.	Kalambak, ... JAV.
Agel-hout, . . . DUT.	Al-camericum, . . LAT.
Lign-aloes, . . . ENG.	Lignum aloes, . . . ,,
Aloes wood, . . . ,,	Xylo-aloe, ... ,,
Eagle-wood, Incense wood,	Agallochum of Dioscorides.
Agallocha, ... ,,	Tarum of Pliny.
Black agallocha, . . ,,	Agila gahru, . MALAY.
Bois d'aigle, . . . FR.	Kayu gahru, . . ,,
Agallochee, . . GR. ?	Pao d'agila, . . . PORT.
Ahel; Ahelim, . HEB.	Pao d'aguila, d'aquila, ,,
Ahiloth, ... ,,	Agara; Agarhu, . SANSK.
Ud-i-Chini, HIND., PERS.	Kisna, ... SIAM.
Ud-i-Hindi, ,, ,,	Krishna agaru, TAM., TEL.

A highly-fragrant wood, much esteemed by Asiatics for burning as incense. It is made into the pastilles called Ud batti in Hindi. There are several kinds in commerce, and supposed to be obtained from the Aloexylon agallochum, *Lour.*, Aquilaria agallocha, *Roxb.*, the Aq. Malaccensis, *Lam.*, and the Aquilaria secundaria. The eagle-wood incense seems to be a resinous deposit in the interior of the tree. It is mentioned in Num. xxiv. 6, Prov. vii. 17, Cant. iv. 14. In Siam, only one kind of tree is known to produce this; it is only found in one tree out of twenty, and labourers often cut up several before finding any of it. It chiefly occurs in the trees on the islands in the Gulf of Cambodia. They have a knowledge of the outward indications, and, felling the tree, preserve the dark diseased portion, which is sold at ten shillings the pound.—*Bowring, Siam; Royle, Ill.; O'Sh.; Roxb.*

EAKA and Rai are races often included under the name of Limbu, along with the Kirata, or Kirants, and in appearance they are all very much alike.

EAPAY, according to the Karen, the Creator.

EARL GEORGE WINDSOR devoted years of his life to the investigation of the countries and races of the Eastern Archipelago. The principal part of his writings appeared in the Journal of the Indian Archipelago. He also wrote The Eastern Seas, or Voyages and Adventures in the Indian Archipelago in 1832-34, with Observations on the Commercial Resources of the Archipelago, 1837; also Native Races of the East Indian Archipelago Papuans, London, 1853.

EARNEST MONEY, Tirmantha, TAM., is paid down in almost every transaction of India.

EAR-RING. Ἐνώτια, GR.; Inaures, LAT. Mentioned in Genesis xxxv. 4, Judges viii. 24, Hosea ii. 13; are worn in the ears by men and women in Eastern countries, and other ornaments are worn round the neck like the golden bulla and leather torum of the Roman youth. Phylacteries are mentioned in Deuteronomy vi. 8, xi. 18. The Malay women of Menangkabau, in Sumatra, place a saucer-shaped gold ornament in the ear. The Dyak women of Borneo also do this. Ear-plugs are worn by all the Burmese, male and female, in a perforation made in the lobe of the ear, which is gradually enlarged, until it will admit an ornament of the proper diameter. These are made of gold, silver, pinchbeck, horn, wood, rock-crystal, glass, etc., according to the means of the wearer; amber is the favourite and most fashionable material, being worn by the ladies of the court of Ava. An amber pair of ear-plugs cost 100 rupees. Mahomedan and Hindu women in India wear gold ear-rings. The humbler Tamil women insert rolls of palm leaves. The lobe of the ear is sometimes torn by over-stretching. — *Local Committee, Rangoon.*

EAR-SHELLS belong to the genus Haliotis and family Haliotidæ of the mollusca.

EARTH, Globe, World.

Arad, ... ARAB.	Zamin, ... PERS.
Myay, ... BURM.	Bhu, ... SANSK.
Terre, ... FR.	Tierra, ... SP.
Erde, ... GER.	Bhum, ... TAM.
Danya, Jahan, Zamin, HD.	Toprak, . . . TURK.
Terra, ... IT., LAT.	

The surface of the globe has 31,625,625$\frac{1}{2}$ square miles, of which the waters are 23,814,121. The surface covered with water is therefore to dry land as 3·8 to 1·2. The islands form scarcely $\frac{1}{2}$ of the continental masses. In astronomy the symbol of the earth (♁) is the inverted emblem of life, and probably bears some reference to terrestrial corruption and decay.

Earth-Bath is a form of medical treatment occasionally adapted on the littoral tract of the Persian Gulf, and eastwards to the Indus. It had a great run in London about the middle of the 18th century.

Earth Goddess, Mrittika. Human sacrifices were made to this deity in the Tributary Mahals.

Earth Nut, Arachis hypogea, ground-nut. In the year 1879–80, the quantity exported from India was 48,435 cwt., value 2,85,519 rupees.

Earth-Oil is found in great abundance in Burma, where deep pits are sunk to obtain it. It is found more or less in almost every residency of Java, oozing into wells dug in certain spots in the ground for it to drain into.

Earths of kinds are largely used in India. A white earth from the hill state of Dhenkanal, in Cuttack, locally called Teelak earth, is used for making the marks on the forehead, nose, arms, and breast, particularly by Hindu devotees, but also by high class natives in the Madras Presidency. That obtained from the banks of the Dhumseerie Nuddee is used for making a white paste to plaster over their idols. An earth obtained near Seel-Chitta, in the Jummoonah Nuddee, in Nowgong Zillah, is used in painting.

The *Chamarfo* earth of Spiti is of a bright, deep red colour, and used in dyeing.

The *Chasarfo* is an orange-coloured dye-earth of Spiti.

Mitti-gachni, called also Multani Mitti, or Gil-i-Multan, is a soft saponaceous earth, used for washing the hair, also medicinally. Its white variety, termed Khujru, is eaten. Its yellow variety, termed *Khakri*, is used for dyeing cloths. A light-green variety, *sabzi matti*, is used for washing the hair.

The *Gehru* and *Hirmji*, or red ochres, are impure sesquioxides of iron, used by Hindu ascetics for dyeing their cloths of a dull orange colour. Yellow ochre, or hydrated sesquioxide of iron, is the dyestuff called ramraj. The black earth of tanks is used for dyeing a blue-black. *Reh*, an

impure carbonate or sulphate of soda, is used in dyeing, as a detergent for washing the cloth.—*Panj. Exh.; Proctor's Saturn*, p. 197 ; *Maury.*

EARTHENWARE.

Aardegoed, . . . DUT.	Terraglia, ... IT.
Crockery, . . . ENG.	Gliniauæ naczynia, POL.
Vaikselle de terre, . . FR.	Gorschetschnue possodu,
Poterie, ... ,,	RUS.
Irdene Waaren, . GER.	Loza de barro, . . SP.
Chenikam, GUJ., HIND.	Pani, ... TAM.
Stoviglie, ... IT.	Kunda, ... TEL.

Porcelain, stoneware, flint-ware, delft, ironstone, china-ware, etc. Earthenware and porcelain imported into India in the six years 1874–75 to 1879–80 ranged in value about 10 and 12 lakhs of rupees. Sir George Birdwood says, truest to nature, in the directness and simplicity of its forms, and their adaptation to use, and purest in art, of all its homely and sumptuary handicrafts, is the pottery of India,—the unglazed rude earthenware, red, brown, yellow, or grey, made in every village, and the historical glazed earthenware of Madura, Sind, and the Panjab. Unglazed pottery is made everywhere in India, and has been from before the time of Menu ; and the forms of it shown on ancient Buddhist and Hindu sculptures, and the ancient Buddhist paintings of Ajunta, are identical with those still everywhere thrown from the village hand-wheels. In the sculptures of Bhuvaneswar, the form of the kalasa or water jug is treated with great taste as an architectural decoration, especially in its use as an elegant finial to the temple towers. In the same sculptures is seen the form of another water vessel, identical with the amriti, or 'nectar' bottle, sold in the bazars of Bengal. . . . The principal varieties of Indian fancy pottery, made purposely for exportation, are the red earthenware pottery of Travancore and Hyderabad in the Dekhan, the red glazed pottery of Dinapur, the black and silvery pottery of Azimghur in the North-Western Provinces, and Surajgura in Bengal (Bhagulpur), and imitation bidri of Patna and Surat in Gujerat, the painted pottery of Kota in Rajputana, the gilt pottery of Amroha, also in Rajputana, the glazed and unglazed pierced pottery of Madura, and the glazed pottery of Sind and the Panjab. In all these varieties of Indian pottery is an artistic effect, unconsciously sought to be produced. . . . The potter's art is of the highest antiquity in India ; and the unglazed water vessels, made in every Hindu village, are still thrown from the wheel in the same antique forms represented on the ancient Buddhistic sculptures and paintings. Some of this primitive pottery is identical in character with the painted vases found in the tombs of Etruria, dating from about B.C. 1000. It is interesting to find that pottery is still made all over India, for daily use, which is in reality older than the oldest remains we possess of the ceramic art of ancient Greece and Italy. None of the fancy pottery made in India is equal in beauty of form to this primitive village pottery, and most of it is utterly insignificant and worthless. The only exception is the glazed pottery of Madura, and of Sind and the Panjab, which alone of the fancy varieties can be classed as art pottery, and as such is of the highest excellence. The Madura pottery is in the form generally of water bottles, with a globular bowl and long upright neck ; the bowl being generally pierced so as to circulate the air round an inner porous bowl. The outer bowl and neck are rudely fretted all over by notches in the clay, and are glazed either dark-green or a rich golden brown.—*Faulkner ; M'C.*

EARTHQUAKES.

Myay-gyee, . . . BURM.	Zalzalah, HIND., PERS.
Tremblement de terre, FR.	Terremuolo, . . . IT.
Erdheben, . . . GER.	Terremoto, ... SP.

Earthquakes are of repeated occurrence in the south and east of Asia. Captain Baird Smith, in a memoir on Indian earthquakes, enumerated 162 of them between the years 1800 and 1842, and many of these were felt in the delta of the Ganges. Dr. Tholozan (Comptes Rendus), physician to the Shah of Persia, examined the records of earthquakes in the works of the principal Arabian and Persian historians, from the 7th to the 17th centuries, and found 111 intense and considerable earthquakes, in which houses were destroyed, sometimes entire towns, with loss of life. Some lasted over many days, notably that of Khorasan in 644. The Musalman historians often give the accompanying meteorological phenomena with remarkable precision. High winds were frequent, and whirlwinds. Persia experienced earthquakes 52 times during those ten centuries, —31 times alone, and 21 times along with Syria, Mesopotamia, Egypt, Turkestan, etc. ; Irak, 10 times ; Khorasan, 9 times. Mesopotamia was 23 times agitated,—7 times alone, and 16 times along with neighbouring countries. Egypt was attacked 18 times alone, and 9 times with other countries. Syria 9 times alone, and 17 times with other countries. The results of his inquiry corrected two assertions that have been made. One is that of Van Hoff, that from the commencement of the 13th to the latter half of the 17th century, there was an almost complete cessation of earthquakes in Syria and Judæa ; the other, that of the celebrated orientalist Quatremère, that the north-east portion of Africa, comprising Egypt, has been nearly always exempt from earthquakes. In Egypt, 27 earthquakes are recorded in seven centuries (796-1482). The most extended record of earthquakes is that by Mr. Walford in the Statistical Society's Journal for 1878. In 1881, Herr Fuchs recorded 244 in Der Naturforscher, —86 in winter, 61 in autumn, and 56 in summer.

Earthquakes are repeatedly felt at Kābul. Vigne tells us (Pers. Narrat. p. 212) that there are usually a dozen in the course of a year. While the British were besieged in Jalalabad in 1841, its walls were thrown down by an earthquake.

The surface of the Sunderbuns has more than once sunk below the level of the ocean ; and evidence of subsidence are on the whole coast from Cape Negrais to Akyab on the eastern side of the Bay of Bengal ; but Reguain, or Flat Island, as well as all the other islets and rocks on that part of the coast of Arakan, are undergoing the process of upheaval. This fact was brought to notice in 1840, by means of the nautical surveys of the brig Children. The coast from Akyab to Cape Negrais is indented by deep and narrow gulfs similar to the fiords of Scandinavia, and lies within the prolongation of the great volcanic band of the Sunda Islands, which extends from Java to Sumatra, Barren Island, and Norcondam ; and indeed all the islands on the coast of Arakan bear evident marks of subterranean fire. In the island of Cheduba, 300 miles south-east from the Sandheads, in lat. 18° 51′ N., and long. 93° 28′ E., there are two mud volcanoes which rise to a

height of from 100 to 200 feet. This line of upheaval is in the direction of N.W. by N., to S.E. by S. It is 100 geographical miles in length, and varies in breadth from 20 miles, to a very narrow strip of islets and rocks. The upheaval has been greatest in the middle of the line. At the Terribles it was 13 feet, at different parts of the N.W. reefs of Cheduba 22 feet, at the north point of the island 16 feet, in the middle or the west coast 13 feet, at the south end 12 feet, and the islands south of Cheduba to Foul Island 9 to 12 feet. The first symptoms of upheaval were observed about the year 1750 or 1760, on the occurrence of a great earthquake, by which the sea was driven over the land, and the effects of which were felt as far as the city of Ava. An earthquake is said to have occurred 100 years earlier, and the inhabitants believe that a similar phenomenon occurs every century. In the island of Kyouk Phyoo, 35 geographical miles north, or nearer the Sunderbuns, a volcanic eruption took place suddenly, east of the station, at 6 P.M. in June 1852. Again, on Christmas eve 1855, the island was illuminated for miles around by a huge column of fire thrown up by the volcano; and in April 1857, about 10 A.M., the volcano was again in commotion. We learn from the Philosophical Transactions (vol. liii.), and from the Journal of the Asiatic Society (vol. x. pp. 351-433), that the town of Chittagong, in Bengal, was violently shaken by an earthquake on the 2d April 1762, the earth opening in many places, and throwing up water and mud of a sulphurous smell. At Bardavan a large river was dried up; and at Bar Charra, near the sea, a tract of ground sunk down, and 200 people with all their cattle were lost. It is said that 60 square miles of the Chittagong coast suddenly and permanently subsided during this earthquake; that Ces-lung-Toom, one of the Mug mountains, entirely disappeared, and another sunk so low that its summit only remained visible. Foul Hills are also described as having been variously rent asunder, leaving open chasms from 30 to 60 feet in width. Towns, which subsided several cubits, were overflowed with water; among others, Deep Gong, which was submerged to the depth of 7 cubits. Two volcanoes are said to have opened in the Seeta Canha Hills. The shock was also felt at Calcutta. While the Chittagong coast was sinking, a corresponding rise of the ground took place at the island of Ramree, Reguain, and at Cheduba (Johnston's Physical Atlas).

The entire Eastern Archipelago rests on a volcanic base nearly circular in form, commencing from the west coast of Burma, and passing through the great islands of Sumatra, Java, Celebes, and Luzon. In the last island, one of the Philippines, are some violently active volcanoes. The volcanic chain goes round the outer circle of the Eastern Archipelago, and the volcanic action consequently affects the whole group, working along the western end of the Indo-Chinese peninsula, *i.e.* on the Arakan and Chittagong coast, up to the Himalaya, 1000 miles away. In the Kangra, Kullu, and Lahoul districts, the Jwala Mukhi fires of Kangra, the Mani Karn boiling springs of Kullu, are but so many indications of the pent fires which lie beneath.

In 1640, from an eruption at Buhayan, 180 miles from Zamboanga, in Mindanao, large masses of stone were flung to a distance of 6 miles. The ashes fell in the Moluccas, and in Borneo. Dense darkness covered Zamboanga. Ships at sea lighted their lamps at 8 A.M., but the lights could not be seen through the clouds of sand. The noise of the eruption was heard at Manilla. The mountain whence the eruption originated disappeared, and a lake was formed and still remains in the locality.

The island of Simo, one of the Batu group, on the west coast of Sumatra, had an earthquake and sea-wave on the 9th March 18—? Before the occurrence the island had 120 houses, and a population of 1045. On that day 96 houses were destroyed, and 675 of the inhabitants, besides 103 temporary residents, lost their lives. An earthquake was felt at the fall of the evening, shortly before the inundation. All the inhabitants then assembled on the open space in the middle of the campong, but a moment afterwards they tried to make their escape from thence, as they dreaded the fall of the houses, which were already tottering. They were driven back, however, by a rush of water which approached from the back of the campong. Running back from this, they were overwhelmed by another terrific wave, which, out of 282 persons, swept off 206. Two waves met each other at this point, and large masses of rock were carried from the sea for 100 to 200 paces inland, and the water retired with force, sweeping much into the sea. Soon after the earthquake, heavy reports like distant cannon shots were heard, on which was observed approaching at a great distance from the sea, a wave of the height of a full-grown cocoanut tree, and which dashed with furious force on the island. Some saved themselves by flight, the rest were overtaken by the water and swept away. Three such waves succeeded each other.

In the Philippines, the most fatal earthquakes occurred in 1601; again, on the 30th November 1610, 30th November 1645, 20th August 1658, in 1675, 1699, 1796, 1824, 1852, in 1863, and 1869, and from the 13th to the 24th July 1872? On the 20th July a violent shock was felt at 4 o'clock in the afternoon, which lasted 40 seconds, and completed the work of destruction begun by the previous ones. All the volcanoes in the island were in eruption, and in many places the earth opened, throwing up boiling water and sand. At 11 o'clock the same night a fourth shock occurred, lasting 55 seconds, and scarcely a building was left standing in Manilla.

In 1645, for two months there was a succession of fearful earthquakes. In Cagayan, a mountain was overturned, and a whole town engulfed at its foot. Torrents of water and mud burst forth in many places. All the public buildings in the capital were destroyed, 600 persons were buried in Manilla beneath the ruins of their houses, and 3000 altogether are said to have lost their lives.

An earthquake of 1796, in the Philippines, was sadly calamitous.

On the 3d June 1863, at half-past 7 in the evening, a flame was seen to rise from the earth and gird the city of Manilla, and at the same time a terrific quaking of the earth took place. It lasted scarcely a minute, but in that short space nearly the whole of Manilla was reduced to a heap of ruins, upwards of 1000 persons killed, and many thousands injured. The priests, their

choristers and sacristans, and the Christians who were hearing the vespers of Corpus Christi, were nearly all buried under the ruins of the cathedral and other churches. The flame that surrounded the city was seen from the bay to ascend towards the sky; and another, a triple-snaked one, came from the land over the water to the shipping. On shore the earth everywhere sunk at least 2 feet.

Earthquakes are frequent in the Moluccas, and indeed in all the islands between Sumatra and 125° of E. longitude.

On the 21st December 1846, three shocks of an earthquake were felt in Ternate. The first two were very heavy, and accompanied by a thundering noise, and columns of ashes were ejected, and a lava stream flowed to the north of the mountain without causing any damage. Other two earthquake shocks were subsequently experienced at Ternate, and on the 8th of April 1847, about half-past 3 o'clock, a severe earthquake took place, which was felt in a direction from north to south.

In the month of March 1847, a sinking of the mountain Nimbenok (which is three days' distance from Kupang) took place, in consequence of which many houses with their contents were destroyed by great stones that rolled down.

A severe earthquake was experienced in Batavia, and over an extensive region in Java, in 1847. A shower of ashes fell at Buitenzorg on the night of the 17th October 1847, which came from the Guntur mountain, in the district of Limbangan, residency of Preangar. On Sunday the 17th October, at 11 o'clock P.M., earthquake shocks, following each other in quick succession, were felt at Tijundjur. A shower of ashes began to fall the same night, and by the following morning had clothed the earth, grass, trees, and buildings with a brown covering. The earthquakes had not wholly stopped at Tijundjur on the 29th October. The shower of ashes reached as far as the frontiers of the residency of Bantam, a distance of more than 80 miles to the westward of the place of the eruption.

The island of Gunong Api, or Fire Mountain, is wholly a volcano, and has caused repeated desolation around it.

In 1586 Japan was shaken by dreadful earthquakes. From the province Sacaja, as far as Miaco, the earth trembled for forty days successively. In the town of Sacaja 60 houses were thrown down. At Nagasama, a small town of about 1000 houses in the kingdom Oomi, the earth gaped and swallowed up one half of that place; the other half was destroyed by a fire. Another place in the province, Facata, much frequented by merchants, and likewise called Nagasama by the natives, after it had been violently shaken for some days, was at last swallowed up by the sea; the water overflowed the coasts, washed away the houses and inhabitants, and left no footstep of that once rich and populous town. A strong castle in the kingdom of Mino, built at the top of a high hill, after several violent shocks, sunk down and disappeared of a sudden in the gaping earth, a lake quickly filling the place where the castle had been. Another accident of this kind happened in the province Ikeja. Many more gaps and openings were observed up and down the empire.

At Yeddo, at 8 o'clock on the morning of the 27th July 1783, a great wind arose, accompanied by subterranean mutterings, which increased till the 1st August. On that day earthquakes shook the houses, the shocks increasing in intensity; the summit of the mountain was rent open, fire and flame burst forth, showers of sand and stones were thrown high in the air, great chasms rent the earth, into which thousands fell in their flight. The shocks continued until the twelfth day, and were felt over a space of thirty leagues. Twenty-seven towns and villages were destroyed; the rivers overflowing, inundated the whole country, and completed the work of destruction.

On the 23d of December 1854, at 9.45 A.M., shocks of an earthquake were felt on board the Russian frigate *Diana* as she lay at anchor in the harbour of Simoda, not far from Jeddo in Japan. In fifteen minutes afterwards (10 o'clock), a large wave was observed rolling into the harbour, and the water rapidly rose on the beach. The town, as seen from the frigate, appeared to be sinking. This wave was followed by another; and when the two receded, which was at 10h. 15m., there was not a house, save an unfinished temple, left standing in the village. These waves continued to come and go until 2.30 P.M., during which time the frigate was thrown on her beam-ends five times. A piece of her keel 81 feet long was torn off; holes were knocked in her by striking on the bottom, and she was reduced to a wreck. In the course of five minutes the waters in the harbour fell, it is said, from 28 to 3 feet, and the anchors of the ship were laid bare. There was a great loss of life; many houses were washed into the sea, and many junks carried up—one two miles inland—and dashed to pieces on the shore. The day was beautifully fine, and no warning was given of the approaching convulsion; the barometer standing at 29·87 in., thermometer 58°; the sea perfectly smooth when its surface was broken by the first wave. It was calm in the morning, and the wind continued light all day.

In a few hours afterwards, at San Francisco and San Diego, the tide-gauges showed that several well-marked and extraordinary waves had arrived off the coast of California. The origin of these waves, and those which destroyed the town of Simoda and wrecked the *Diana*, was doubtless the same. But their birthplace is not known to be near the coast of Japan.

B.C. ? 505, Earthquake in China.
A.D. 285, In the island of Niphon, a lake 72½ miles long by 12½ wide formed in one night.
,, 893, In India, 180,000 souls destroyed by an earthquake.
,, 1040, Tabreez overthrown, and 50,000 people killed.
,, 1139, Causana, in Persia, destroyed, and 10,000 of its inhabitants killed.
,, 1505, Kābul almost destroyed by an earthquake.
,, 1596, Several cities of Japan destroyed.
,, 1703, Jeddo, in Japan, overthrown, 200,000 persons perished.
,, 1720, 20th June, a fearful earthquake in old Dehli, and shocks recurred for a month and two days.
,, 1727, Tabreez overthrown, 77,000 persons perished.
,, 1731, Pekin destroyed by earthquake, 30th November, 100,000 people destroyed.

A great storm and earthquake devastated Calcutta in 1737, described in the Gentleman's Magazine printed in 1738-39. The account runs thus:—'In the night between the 11th and 12th October 1737, there happened a furious hurricane

at the mouth of the Ganges, which reached 60 leagues up the river. There was at the same time a violent earthquake, which threw down a great many houses along the river-side. In Golgotta (Calcutta) alone, a port belonging to the English, 200 houses were thrown down, and the high and magnificent steeple of the English church sank into the ground without breaking. It is computed that 20,000 ships, barks, sloops, boats, canoes, etc., have been cast away. Of nine English ships then in the Ganges, eight were lost, and most of the crews drowned. Barks of 60 tons were blown two leagues up into land over the tops of high trees. Of four Dutch ships in the river, three were lost with their men and cargoes. 300,000 souls are said to have perished. The water rose 40 feet higher than usual in the Ganges.'

1780, Tabreez was destroyed by an earthquake, 15,000 houses thrown down, and multitudes perished.
1782, A furious cyclone occurred at Surat.
1793, 1st April, an earthquake at Japan, 53,000 persons destroyed.
1804, Hail-storm at Allahabad.

Heyne mentions an earthquake in Mysore in the year 1800, whilst a great hurricane raged between Ongole and Madras.

On the 16th June 1819 an earthquake was felt over a great extent of country, but its centre was in Cutch. It is the most violent recorded in India. The first and greatest shock occurred a few minutes before 7 in the evening of the 16th June 1819. The alarmed inhabitants of Bhooj fled in all directions to escape from their falling habitations. A heavy noise, the violent undulatory motion of the ground, the crash of the buildings, caused dismay and terror. The shock lasted for two or three minutes, and during that brief time Bhooj was almost levelled with the ground, and nearly 2000 persons perished in Bhooj alone. The walls of Bhooj fell about 6.48 P.M. Before 11 P.M. three shocks occurred. On the 17th the earth was frequently in motion, attended with gusts of wind. Until the 1st July there were two or three shocks daily; one daily throughout July, one every three days in August and September, about six in October, and three in November, —about 100 in all. The great shock was felt at Calcutta at 7.6, Cutch time, 18 minutes later than at Cutch; at Chunar, 7.15.6; at Pondicherry, 8 P.M.; at Ahmadabad, 7.19. At Khatmandu it was felt sensibly in the evening; also in Sind. It embraced a space of 18 degrees of latitude and 20 of longitude.

1827, Fort Kolitaran, near Lahore, destroyed by earthquake.
1842, Jalalabad walls thrown down.

On the 11th November 1842 occurred a severe earthquake, of which Calcutta appeared to be the centre of emanation. The shocks extended 300 miles north to Darjiling in the Himalaya mountains, to Chittagong, or 250 miles on the east, and to Monghir, or 210 miles on the west; and it was also felt on board the *Agincourt* 70 miles south of the Floating Light.

Earthquake shocks were experienced in Travancore in February 1823, 19th September 1841, 20th November 1845.

1852, Manilla injured by earthquakes.
1853, Shiraz destroyed by earthquakes, and 10,000 people killed.

About the middle of the 19th century, several earthquakes are recorded to have occurred in British India, but the precise dates have not yet been found.

In July 18—? smart shocks of an earthquake were felt at Lahore, Rawal Pindi, Attock, and Wazirabad. The shock of an earthquake was felt at Peshawur on the 16th September 18—? about 7 A.M. The vibrations were barely sensible, but the concomitant rumbling noise was well defined. On the afternoon of the same day, the valley was visited by a dust-storm, followed by drizzling rain, which continued throughout the night.

In January 18—? there occurred an extended earthquake at Chittagong on the eastern coast of Bengal, and also at the Kangra valley to the north of the Panjab, amid the N.W. Himalaya; the same earthquake was felt in the south at Sholapur, at Bombay, at Mahabaleshwar and other places on the Western Ghats, and in the Madras Presidency at Ramandrug near Bellary. An earthquake about the middle of the 19th century was felt all over Bengal, at Dacca and Silchar in Cachar; as also in Assam on the 14th December, a day previous to the shocks at Chittagong. Dewangiri also was agitated.

On the 19th August 18—? the same day that an earthquake was felt at Singapore, severe shocks were experienced on the west coast of Sumatra. The Sumatra Courant of the 20th thus described them:—Since noon yesterday, repeated shocks of earthquake have been felt here. At 6 o'clock several movements were observed. Sometimes there were horizontal and sometimes vertical shocks, felt at 8.45, 10.25, and 11.30 P.M., with a duration on each occasion of from 2 to 3 minutes; at 2.25 the shocks were the heaviest, and lasted fully four minutes. To-day, at about 4.30, 8.30, 11, and 11.45 A.M., these movements were repeated with diminishing severity. Further shocks were felt at Pading on the 25th and 26th August. Indrapura, Batang Kapas, Painam, Rau, and Natal announce heavy earthquake shocks at those places. At Natal the fort was rent to its foundations in several places.

An earthquake was felt on the 26th July 1854 all over Lower Bengal.

1854, Anasaca and Simoda, in Niphon, were destroyed by earthquake, and Jeddo much injured.
1855, 11th November, Jeddo nearly destroyed by earthquake, 30,000 inhabitants overwhelmed.

Earthquakes occurred in Travancore on the 17th March 1856, on the morning of the 11th August 1856, again at 4.25 P.M. of the 22d August, again on the 1st September.

An earthquake occurred at Bombay on the 8th December 1857.

Mount Abu is subject to frequent shocks of earthquakes.

An earthquake of the 24th August 1858 was felt in Calcutta and Madras. Prome in Burma, barely 50 miles east of the active volcanoes at Ramree and Cheduba, suffered considerably; many pagodas were shaken down and houses destroyed. At Kyouk Phyoo they had rain all the 23d. Between 4 and 5 P.M. a slight shaking of the floor was first perceptible, suddenly followed by a rumbling noise and a vibratory motion of the ground, till the earthquake became violent. This vibratory action of the earth from E. to W. lasted

for about 2¼ minutes, and then suddenly ceased. The earth opened in various places, and a peculiar bluish soft sandy matter exuded from them, and the scene closed by an eruption from the volcano. The *Proserpine* ship was lying in 11 fathoms of water at the time of the shock, and the sensation felt by those on board was like that experienced when running on a reef; the vessel trembled in every part of her.

On the 10th January 1869, a severe earthquake occurred in Assam, Cachar, and Munipur. At Silchar the ground rose about 20 feet in a long wave, and the river rushed backward for an hour. The earth opened in many places, and volumes of blue sand and water were thrown up, and a similar splitting of the earth occurred at Munipur. It extended a long distance into Upper Burma. It was very severe in the hills to the N.E. of Munipur. Even in the hills the ground opened extensively, and water rushed out, with mud; people fell into the fissures and were injured.

In Chittagong and Eastern Bengal, earthquakes have been felt every few years, some shocks being pretty severe. Sita Khoond is perhaps the centre of volcanic action in the Chittagong district.

In North Arcot, in 1859, there occurred some shocks in Tripati and Chandragiri. One shock was felt at 5 P.M., on the 2d February 1859, taking its course from east to west. The noise resembled that occasioned by a railway train going at full speed, and was audible for the space of one minute, during which time the ground trembled. The shock took its course from the foot of the Tirumallay Konda, a hill seven miles north of the Chandragiri Kasbah, and travelling southward, terminated at Thorno Kumbala village, seven miles south of Chandragiri. The shock was felt west as far as Pakala, some 16 miles off, and on the north-west as far as Bimavaram, 10 miles distant.

A shock of an earthquake was felt at Trichinopoly on Friday morning of 18— about a quarter before four. The shock lasted nine or ten seconds, passed on from west to east; not a cloud was visible in the heavens, which were beautifully clear.

1867, The town of Djooja in Java destroyed by an earthquake.

1872, 14th and 15th Dec., Lehree, Eastern Cutchee, destroyed by earthquake, and about 500 persons killed.

Earthquakes occurred at Kulla-jo-Kuhar in Kohistan in 1873. On the 1st July there occurred a very severe shock about noon, and four or five shocks were felt between that and the next morning; most of them were preceded by a noise like that produced by firing a heavy gun.

On the 5th of August there was another earthquake at Kulla-jo-Kuhar. Two landslips took place near Kulla-jo-Kuhar, and slips in the Karo and Kamhu hills also.

On the 14th, at Kulla-jo-Kuhar there was another earthquake between five and six in the evening; and on the 15th there was another shock about the same hour, with similar noise, at Jakro, about two miles from Kulla-jo-Kuhar.

In 1876, in the Philippine Islands, earthquakes were altogether 41 in number, viz. 11 in North Luzon, 8 in South Luzon, 15 in Central Luzon, 1 in Mindoro, 2 in Masbate, 1 in Leyte, and 4 in Mindanao.

Captain W. J. Gill, R.E., travelled in 1877–8 on the western frontier of China, on the borders of Tibet, on which he entered at Ta-chien-lu, and advancing to Li-thang and Ba-than, he found that the latter place had been rebuilt, having a few years before been wholly destroyed by a frightful series of earthquakes, which devastated the whole neighbourhood.

On the 2d March 1878, Simla had a long continued earthquake. It was the third in six months. About the same date a severe earthquake was felt at Peshawur, Rawal Pindi, Lahore, and Murree. A large portion of the inner wall of the fort at Peshawur fell down from the shock.—*Capt. M'Murdo in Tr. Bo. L. So.; Jameson's Edinburgh Journal*, 1820.

EAST.

Mashrik, . . . ARAB.	Dakshina, . . . SANSK.
Est, Orient, . . . FR.	Oriente, ... SP.
Osten, Morgenland, GER.	Ghyun-doghurussu, TURK.
Il-Levante, . . . IT.	

By the Hindu, who worships the sun, the cardinal points are named with reference to the east: Aspara, the front, or the east, to which he turns in his daily morning worship; Apara, behind, or the west; Vama, the left hand, or the north; and Dakshina, the right hand, or the south. By the Mahomedan, who turns his face to the west, towards Mecca, these terms are exactly reversed, and Dachin, which still means the right hand in Kashmiri, is now used to denote the north.

The east, the Morgenland of the Germans, has been the theme of innumerable writers, on its people and on their customs. Burder in his Oriental Customs, Ward in his Hindoos, Hardy in his Eastern Monachism, Roberts in his Oriental Illustrations of the Scriptures, Bunsen's Egypt, his God in History, Max Muller's Sacred Books of the East, and the Hebrew Scriptures, have given to the western nations a vast amount of information. The races occupying the south and east of Asia are of Turanian and Mongol origin, Semitic, Aryan, and African, all various in personal appearance, habits, and customs.

The *Shemite*, says Layard, whether Hebrew, Arab, or Syrian, has a brilliant imagination, ready conception, a repugnance to any restraint that may affect the liberty of his person or of his intellect. He conceives naturally beautiful forms, whether they be embodied in his words or in his works; his poetry is distinguished by them, and they are shown even in the shape of his domestic utensils. This race possesses in the highest degree what we call imagination. The Shemite, says Layard, shows a ready eloquence; his words are glowing and apposite; his descriptions true, yet brilliant; his similes just, yet most fanciful. These high qualities seem to be innate in him. The best character of the Bedouin, says Burton (Pilgrimage, p. 44), is a gentleness and generosity. The three great monotheistic systems which have divided the civilised world, came forth from nations of Shemite origin; among them arose the priests or prophets of all those nations who hold to the unity of God. In the south and east of Asia are representatives of those three great religions, Jews, Christians, and Mahomedans. The Aryans of Southern Asia are in two distinct branches, viz. the East Aryans, a designation given to the brahmanic Indians who moved into India, to distinguish them from the West Aryans or Persians, who migrated into the northern country of the Zend.

The *Parsee* follow the fire-worship which seems to have been a corruption of doctrines taught by Zoroaster. The East Aryan races in India pursue a worship of nature, of spirits, and of demons; have adopted physiological doctrines as revelations, are worshipping deified mortals and heroes, and are believing in many incarnations of two deities called Siva and of Vishnu. They are spread all over India, and have imparted to its prior occupants a considerable acquaintance with their religious books. These prior peoples constitute the bulk of the inhabitants of British India, and have merely added on to their own nature, and spirit, and devil-worships some of the legends and philosophical views of the East Aryan Hindu; and amongst them and the professors of Hinduism are a multitude of sects worshipping Siva, or Vishnu, or Brahma, or all of these, or their incarnations, or deified heroes, or a mere vikrahamu or idol of stone, or wood, or brass, with or without a form.

Another body of religionists, the *Sikh*, considerable from their activity and their late political power, converts from the Jit or Gete races in the Panjab, have adopted doctrines partly obtained from the monotheistic Mahomedans, and partly from the Aryan Hindu; but though their faith is only about 200 years in existence, they too have broken up into several sects.

The *Mongolian*, whether Scythian, Turk, or Tartar, is without imagination or strong reasoning powers, but is intrepid in danger, steady in purpose, overcoming all opposition, despising his fellows, a great conqueror. Such has been his character as long as history has recorded his name; he appears to have been made to command and to oppress. We find him in the infancy of the human race, as well as at later periods, descending from his far-distant mountains, emerging from the great deserts in Central Asia, and overrunning the most wealthy, the most mighty, and the most civilised of nations. He exercises power as his peculiar privilege and right.—*Layard, Nineveh*, ii. pp. 239 to 244; *Burton's Mecca*, iii. p. 44.

EASTERN GHATS run along the Coromandel coast for about 1000 miles from Balasore, running S.W. to Ganjam, thence to Naggery, near Madras, where they join the range which crosses the country in a north-easterly direction, from the W. Ghats, north of the gap of Palghat. The average elevation of the E. Ghats is about 1500 feet,—Cauvery Hills 4000 feet, Condapilly 1700 feet, west of Madras estimated 3000 feet; hills seen from the Moghalbundi, between Point Palmyras and Chilka lake, appearing in irregular scattered groups, 300 to 1200 feet. See Ghats.

EASTERN PENINSULA, a term frequently employed to designate the Malay Peninsula, to distinguish it from the Western or Indian Peninsula.

EASTERN TURKESTAN, Chinese Turkestan, or Little Bokhara, may be described as the country to the east of the Pamir steppe. It is bounded on the north by the Tien Shan range, on the south by the Himalaya and Kouen Lun, and on the east by the great Gobi desert, which stretches away to the confines of China proper. This province was held by the Chinese, but in 1862 an insurrection broke out, and by 1864, Yakub Beg, the commander of the rebel forces, succeeded in completely ousting the Chinese, and seating himself on the throne. He evinced no small powers of governing, was brave, energetic, and prudent, and by his liberal treatment of merchants, and his merciless severity to robbers, did all he could to encourage trade. He was known under the name of 'the Kushbegi,' or commander-in-chief, but he assumed the title of Atalagh Ghazi. He received with honour and distinction Mr. Shaw, who with Lieutenant Hayward penetrated into Yarkand, and he expressed a desire to send an envoy to the Viceroy of India. His brief career ended in his murder. The chief towns in Eastern Turkestan nearest to British frontier are Yarkand and Khotan. Williams in his Middle Kingdom gives the population of Yarkand, 200,000; Kashgar, 80,000; Siaram, 31,000; Aksu, 20,000.

The entire territory of Little Bokhara, assuming it to extend as far as the meridian of 90°, thus including the great lake of Lob, is sterile in the extreme, but relieved by large and fertile oases,—a feature common to the continuation of the desert eastward, where it becomes the great desert of Gobi or Shamo. The most important and best known oases are those of Kashgar, Yarkand, and Khotan. Of these, the first named lies at the foot of the southern spurs of the Tien Shan range, and consists of a well-watered tract, on the principal river of which, called by the same name, is the city of Kashgar. This was for many centuries the seat of an independent prince, but, after a rebellion in 1826, was reduced by the Chinese authorities to a secondary position in the district of Ili, of which Yarkand is the capital, and to which Khotan has also been attached. Kashgar city is in lat. 39° 25′ N., and long. 74° E. (approximatively); and the river on which it is situated, after a course of 300 miles, unites with that of Yarkand to form the Tarym, which, after a further course of 250 miles, falls into the great lake of Lob-nor. Both these streams are famous for the jasper and jade-stone which are found in their beds. Yarkand is situate in lat. 38° 10′ N., and long. 76° 30′ E., on a river of the same name. It is walled, but with extensive suburbs, and has a population variously estimated at from 40,000 to 200,000. It has belonged to China since 1757, and is governed by Mahomedan and Chinese officials alternately. The environs are highly cultivated, producing wheat, barley, rice, fruits, and silk, and there is extensive pasturage. Yarkand is known to the Chinese by the name of Ya-lo-kiang. Khotan lies to the eastward of Yarkand, and is situated in an oasis said by the Chinese to be about 1000 li or 350 miles in circumference, immediately to the north of the Kara-korum pass. It is watered by a great number of streams, almost all of which flow into the Lob-nor. It contains the six towns of Khotan, Yurun-Khash, Kara-Khash, Djira, Keria, and Takhubin. Khotan city is situate in 37° N., and 80° 35′ E., a position which very nearly corresponds with the site assigned to it as immediately to the N.E. of the Kara-korum pass. It is the Ili-tchi or Ho-taen of the Chinese, and is supposed to contain about 50,000 inhabitants. It was originally a Hindu colony, and is supposed to have been founded about the 2d century, but the magnificent Buddhist temples and monasteries were all destroyed by the Mahomedan conquerors. The northern portion of Little Bokhara, under the

shadow, as it were, of the Ala-tagh, is the district of Aksu, one of the most fertile of the provinces into which the Chinese subdivided their acquisitions here after the revolt of 1826. The products consist chiefly of lentils, wheat, barley, millet, apricots, grapes, and melons, and cotton is also said to grow here of fair quality. The capital of the same name is situate in lat. 41° 9′ N., and long. 78° 40′ E. The natives of the district are renowned for their skill in dressing hides and manufacturing cotton goods, and it is stated that there are mines of copper and one of rubies in the immediate neighbourhood. The chief exports from Eastern Turkestan to Hindustan consist of silks, shawl-wool, charas, felts, and ponies; and the imports are mainly in opium, red goat-skin, piece-goods, chintzes, spices, sugar in a raw state, and drugs. The shawl-wool, termed in Eastern Turkestan Toorfanee or Kucharee, has only of late been brought into use in the manufacture of shawls. This Toorfanee wool is quite as good, if indeed it is not better, than the pashm exported to Kashmir from Chanthan. The region produces jade, gold, alum, saltpetre, sulphur, salt, sal-ammoniac, jasper.—*Vemukof*, p. 133; *Jour. Soc. of Arts*, March 1827.

EAST INDIA COMPANY. Several of these have been known in the south and east of Asia.

The *Portuguese*, who were the first to visit India by way of the Cape of Good Hope, doubled by Da Gama 22d November 1497, never put their eastern trade into the hands of an incorporated company, excepting only in the year 1731, when the king gave permission to *one* ship to make one voyage to Surat and the Coromandel coast, to the exclusion of all other ships. That instance excepted, the monopoly vested in the Crown, until it was abolished in 1752.

The first *French East India Company* was formed in 1604; a second in 1611; a third in 1615; a fourth (Richelieu's), 1642-43; the fifth (Colbert's), 1664. The sixth was formed by the French East and West India, Senegal and China Companies uniting under the name of the Companies of the Indies, 1719. The exclusive privileges of this company were, by the King's decree, suspended in 1769; and it was finally abolished by the National Assembly in 1790.

The Dutch East India Company was formally instituted in 1602, by the union of the funds of various rival companies, which had sprung up in Holland in consequence of the success of Houtman's voyage in 1596-97.

The first *Danish East India Company* was formed in 1612, and the second in 1670. When the charter of the East India Company was suspended, Mr. Henry Koning of Stockholm obtained a charter for a Swedish Company, dated 13th June 1731.

The *Spanish Royal Company* of the Philippine Islands was incorporated in 1733.

The *Ostend East India Company* was incorporated by the Emperor of Austria in 1723, but the opposition of the maritime powers forced the court of Vienna to suspend the company's charter for seven years. After a trying existence, it became bankrupt in 1784, and was finally extinguished by the regulations which were prescribed on the renewal of the British East India Company's charter in 1793.

The *English East India Company* obtained their first charter from Queen Elizabeth in 1599. Their second charter in 1661, from Charles II., was extended in 1665. In 1702, Lord Godolphin united the old company with a new one that had been established in 1698, and renewed their charter in 1773, with a grant of a monopoly to China. When renewed in 1813, it was with permission for other merchants to trade; but a fresh charter in 1833 disconnected them wholly from commerce, made them entirely a political body, and permitted British subjects to settle in India. In the beginning of 1857, on a sudden moving of the martial races, the native army of Bengal revolted, and the predatory races in great portions of Northern India rose in a rebellion, which was only suppressed with much loss of life and at great expenditure of money; and it was then deemed advisable for Her British Majesty in 1858 to assume the direct government of the country, and to rule through a Viceroy, the first of whom was Lord Canning. On the 1st November 1858, it was proclaimed throughout India that its government had been transferred from the East India Company to the British sovereign.

The English East India Company, formed in 1599 by royal charter, had a capital of £30,133. Their first adventure of goods was to the value of £37,000, in five vessels under Captain Lancaster, and in the first fifteen years their profits were to the extent of two hundred per cent. In 1613 they were allowed by Jahangir to settle in Surat. In 1634 Shah Jahan gave a firman for two English factories to be formed in Bengal; and subsequently, in gratitude for the benefits derived by one of the ladies of the zanana of prince Shuja, from the medical skill of Mr. Boughton, Shah Jahan granted the privilege to the English of free trade in Bengal. The first factory of the company was at Masulipatam, but in 1625 it was removed to Armegon, and subsequently (1639) Mr. Day removed it to a village in the territory of the raja of Chandragiri. Here he erected a factory, which was first called Fort St. George, but afterwards known as Madras. In 1662, Charles II. ceded Bombay to the company. In the time of James II., the company, in 1690, obtained the King's permission to send Admiral Nicholson with 12 ships of war, 200 pieces of cannon, and 600 men, to seize and fortify Chittagong, and establish a kingdom; but this proved a failure, and fresh troops were sent out under Captain Heath, who burned down Balasore, and proceeded to Chittagong. But, finding this too strong, he sailed to Madras, which, with Bombay, were the sole possessions remaining to the English. But at this time Aurangzeb had accepted the terms of peace which the English offered, and allowed them to return to trade. Accordingly, Mr. Job Charnock, on the 24th August 1690, landed on the left bank of the Hoogly, and laid the foundation of Calcutta. In 1698, the three villages of Calcutta, Chuttanutti, and Govindpore were purchased for Rs. 16,000, and shortly after, during the reign of William III. of England, the fortress of Fort William was erected. About this time, 1693, a rival English company had been started, from which much injury resulted to the English interest; but on the 22d July 1702 these two companies were amalgamated, under the title of the United Company of Merchants trading to the East. In 1715

an embassy was sent to the emperor Farokhsir at Dehli, with surgeon William Hamilton.

The principal events have been as under :—

1506. Portuguese reached Ceylon. See Portuguese.

1591. A squadron sailed for India under Captain Haymond, but was destroyed by sickness and a storm, and only Captain James Lancaster, with a few seamen, returned.

1599. John Middenhall, merchant, sent as ambassador to the Great Moghul.

1599. Merchant adventurers of London formed an association, and petitioned Queen Elizabeth for a charter. The first authentic deed of the company is entitled 'The names of such persons as have written with their owne handes to venter in the splendid voiage to the Easte Indies (the whiche it maie please the Lorde to prosper), and the somes that they will adventure, the xxij September 1599.' The sum subscribed was £30,133, 6s. 8d., divided into 101 shares, ranging from £100 to £3000.

1600. A corporation formed in London, entitled 'Governors and Company of Merchants of London trading to the East Indies.' Their original petition stated that 'no gentleman was to be employed in any place of charge.' This corporation is the origin of the English East India Company, and of the British Empire in India. Their capital was £72,000. There were 215 sharers, and the Earl of Cumberland at their head, forming the company. The first Court of Committee of 17 directors was held on the 23d September 1600. The number was increased to 24, and then their first regular meeting was held on the 21st October 1600.

1600, 31st December. Governor and Company of Merchants of London, incorporated by royal charter from Queen Elizabeth.

1601, 13th February. First expedition to India cost £69,091, and consisted of 5 ships. The first ship purchased was the *Susan*, of 240 tons, for £1600, and after her three others and a pinnace. Their freight was cloth, glass, cutlery, lead, and tin, and £28,742 in bullion. Captain James Lancaster commanded, with Captain Davies as pilot-major. The wages of the latter was to be £100, with £200 in credit; and if the voyage gave cent. per cent., £500 at the end; if 200 per cent., £1000; if 400 per cent., £2000. The fleet sailed on the 2d May, reached Acheen 5th June 1602, and returned to the Downs 11th September 1603.

1601. French merchants this year sent a fleet for India from St. Maloes, but they failed to reach their destination.

1602. Dutch E. I. C. formed. 1605, Amboyna, Tidore, Ceylon, taken from the Portuguese. 1603, Moluccas taken. 1759, their treaty with Mir Jafar. 23d November, 1759, defeated by Colonel Forde and Commodore Wilson.

1602. Captain Lancaster reached Acheen, and formed a treaty with its king, obtaining permission to build a factory there. These were the first treaty and the first establishment.

1603. Captain Lancaster with fleet returned in September, after a successful voyage. After leaving Acheen, they captured in Malacca a Portuguese ship of 900 tons, then put into Bantam, where they formed a factory or 'house of trade,' and thence to England.

1604. King James I. granted a licence to Sir Edward Michelborne and others to trade to the East. This was the first violation of the exclusive privileges of the company, who designated the parties interlopers or private traders. A French company obtained a charter this year. French career ended 1811.

1606. Cloves purchased by the company at Amboyna for £2948, 13s., sold in London for £36,287.

1608. Captain Hawkins visited Agra as envoy.

1609, 31st May. A new charter granted by King James I. to the company, making their privileges perpetual. The company purchased a ship of 900 tons.

1612. Captain Best obtained a firman from the emperor of Dehli, permitting a trading factory at Surat.

1614. Sir Thomas Roe sent by James I. ambassador to the Great Moghul.

1621. Mr. Muir, in a tract published in 1621, estimates the quantity of Indian commodities imported into Europe, and their cost when bought in Aleppo and in India, as follows :—

	Cost in the East Indies.				Cost when brought into Europe *via* Aleppo or Alexandria.			
lbs.	£	s.	d.	per lb.	£	s.	d.	per lb.
6,000,000 pepper,	62,500	0	0	at 2½d.	600,000	0	0	at 2s.
450,000 cloves,	16,875	0	0	,, 9d.	106,875	10	0	,, 4s. 9d.
150,000 mace,	5,000	0	0	,, 8d.	35,626	0	0	,, 4s. 9d.
400,000 nutmegs,	6,666	13	4	,, 4d.	46,666	2	4	,, 2s. 4d.
350,000 indigo,	20,416	12	4	,, 1s.2d.	75,833	6	8	,, 4s. 4d.
1,000,000 raw silk,	400,000	0	0	,, 8s.	600,000	0	0	,, 12s.
	£511,458	5	8		£1,465,000	19	0	

1622-23, 27th February. English massacred by the Dutch at Amboyna. 1654, Dutch paid £3615 to the king.

1635. Charles I. granted charter to Sir William Courten and others.

1638. Armagaon was abandoned as unsuited for commerce. Fort St. George, the nucleus of Madras, founded by Francis Day in 1639, was E. I. Co.'s earliest territorial possession, properly so called, in India. The land on which it stood, with an area round of about 5 miles in length, by 1 mile in breadth, was purchased from the Raja of Chandragiri, and the factors at Armagaon were removed to it. The factory at Hoogly was established in 1640, and at Balasor in 1642.

1645. In consequence of professional services rendered by Mr. Gabriel Boughton, surgeon of the *Hopewell*, to the Emperor Shah Jahan, additional privileges were granted to the company.

1646. The Governor of Bengal, who had also been professionally attended by Boughton, made concessions which placed the factories at Balasor and Hoogly on a more favourable footing.

1649. Original company and Sir W. Courten's association formed a junction.

1653. Madras raised to a presidency.

1655-56. Lend Cromwell £50,000, and obtain acknowledgment of their rights.

1656. First factory in Bengal of E. I. Co.

1657-58. Unite with merchant adventurers, and form a new joint stock.

1657. Charter of company renewed by Cromwell, and in 1661 confirmed by Charles II.

1658. The company established a factory at Kasimbazar (spelt Castle Bazaar in the records).

1661, 3d April. Charter by Charles II. (Extended 1665.)

1661. Bombay was ceded to the British crown as part of the dower of Catharine of Braganza, but was not delivered up until 1665. King Charles II. transferred it to the East India Company, for an annual payment of £10, in 1668. The seat of the Western Presidency was removed to it from Surat in 1684-87.

1662-1680. Sivaji founded the Mahratta rule.

1664. French E. I. Co. formed, and their capital built in 1674 at Pondicherry.

1664. In a work, Treasure by Foreign Trade, p. 50, Mr. Thomas Mun, a director of the E. I. Co., was the first to regard gold as an article of commerce.

1667-8, 24th January. The first notice of tea in the company's records. In a despatch to their agent at Bantam of that date, he is ordered to send home 100 lbs. of tea, the best he can get.

1667. Charter renewed afresh, and authority to establish a mint at Bombay.

1674-75. Prohibit seamen from settling at Bombay.

1680, 28th October. St. Mary's Church, foundation-stone laid by Mr. Master at Madras.

1681. Sir Josiah Child published a treatise, in which it appears that the company then had 556 partners, 36 ships of from 100 to 775 tons; that the customs duties on the trade amounted to £60,000 or £70,000 a year.

1682. Bencoolen, settlement in, by E. I. Co. (Ceded to the Dutch, 1825.)

1684. Attempt to check interlopers.

1685-86. Resolved to prosecute interlopers in England; order hostilities against Moghul and Nawab of Dacca.

1686–87. Resolve to establish a mint at Madras.
1686. An attempt, projected by Sir J. Child, to acquire territorial empire in India failed.
1687–88. Obtain a charter to make Madras a corporation.
Charnock, Job, settled at Calcutta 1690; died 10th January 1692.
1691. Fort St. David purchased by E. I. Co. 1758, surrendered to the French.
1692. Company's agency transferred from Hoogly to Calcutta.
1693, 7th October. Obtain a new charter, and undertake to export £150,000 of British manufactures. 11th November, obtain an additional charter, for augmenting their stock.
1694–95. Obtain an additional charter.
1698–99. An English East India Co. started as rivals, and copy the constitution of the London E. I. Co.
1699 to 1702. Ignoble rivalry between the two companies; but in 1702–1703, by Lord Godolphin, the London and the English Company come to terms, and coalesced in 1707–1708, under the title of the United Company of Merchants of England trading to the East Indies.
1698. Company acquired a grant from Azim, grandson of Aurangzeb, of Calcutta and two adjoining villages, with leave to exercise judiciary powers over the inhabitants, and erect fortifications. These were given the name of Fort William.
1707. Murshid Kuli Khan, Governor of Bengal, also called Jafar Khan.
1707. Aurangzeb died.
1715. An embassy went to Farokhsir, and in 1717 they got the island of Diu, 37 townships in Bengal, which gave them the command of the river for 10 miles S. of Calcutta, and had the villages restored to them, near Madras, which had been formerly given by the Arcot ruler and resumed. See Hamilton.
1724. Average of 10 years ending with 1724, the total value of British products annually exported was £92,410, 12s. 6d., and of bullion £518,102, 11s.; total, £617,513, 3s. 10d.
1741. Average of the 8 years ending in 1741, the annual value of British goods exported was £157,944, 4s. 7d.
1748. Seven years ending with 1748, the exports value amounted to £188,176, 16s. 4d.
1732 to 1818. Warren Hastings born 1732.
1749. A writer in India.
1763. Revisited England.
1769. 2d seat in Madras Council.
1772. President of Bengal Council.
1773. Governor-General of India.
1786–87. After return to England, impeached on four heads; trial lasted from 13th February 1788 till 23d April 1795, on which date he was acquitted.
1796. The E. I. Co. granted him £4000 annually.
1818, 22d August. Died.
1739. Nadir Shah's invasion.
1740. Ali Vardi Khan usurped the kingdom of Bengal; died 1756, and was succeeded by his grandson, Suraj-ud-Dowla, aged 18.
1746. Madras captured; restored, 1749.
1743. E. I. Co. lend one million to Government at 3 per cent., to have their charter renewed to 1780.

Clive, Robert, born 29th September . . . 1725
Arrived at Madras, ... 1744
Ensign's commission, ... 1747
Captured Arcot, 30th August . . . 1751
Took Conjeveram, ... 1751
Defeated French at Cauverypak, . . . 1751
Captured Covelong and Chingleput, . . 1752
Revisited England, ... 1752
Returned to India, and Governor of Fort St. David, ... 1755
Retook Calcutta, ... 1757
Overthrew Suraj-ud-Dowla at Plassey, 23d June 1757
He had 700 Europeans, 570 sailors, 1400 sepoys, and 8 pieces of artillery. The Bengal Viceroy's army was 3500 foot, 15,000 horse, and 50 cannon.
Defeated the Dutch at Chinsurah, . . . 1759
Left India, February 1760
Returned to India as Viscount and Governor-General, ... 1764

EAST INDIA COMPANY.

Obtained from Shah Alam the Dewani of Bengal, Behar, and Orissa, April . . . 1765
Suppressed officers' conspiracy, . . . 1766
Abolished private trade, January . . . 1767
Quitted India, January 1767
A committee of Parliament formed to examine charges against him, ... 1773
Destroyed himself, 2d November . . . 1774

1751. Tatta, factories at.
Circars. The five northern were granted to the French, 1753. In 1759 Clive seized them, and they were secured by treaty in 1765.
1755. Commodore James and Mahratta army took Severndrug and Bancoote from Conaji Angria. 11th February 1756, Clive and Admiral Watson took Gheriah.
1756. Dacca ceded to E. I. Co. by Shah Alam.
1756. Ali Vardi Khan, Nawab of Bengal, died.
1756, June 20. Suraj-ud-Dowla attacked and took Calcutta. 146 British thrust into a small guard-room; only 23 came out alive next morning. Retaken by Clive and Watson, 2d January 1757. First territorial possessions in Bengal.
1756. Angria taken, and forts destroyed.
1757 to 1783. Sir Eyre Coote's victories.
1761. Major Hector Munro took Mahé. 1763, restored.
1761, 7th January. Panipat, battle of.
1763, April. Nawab Mir Kasim Ali took up arms against E. I. Co.; was defeated at Bhagulpur, and fled. Mir Jafar restored.
1765, January. Mir Jafar died, and his son Najm-ud-Dowla installed. Pensioned, June 1765.
1765, 3d May. Shuja-ud-Dowla, Vizir of Oudh, defeated at Corah, near Allahabad.
1765. Emperor of Dehli grants the Circars to E. I. Co.
1765, 12th August. Emperor grants E. I. Co. the Dewani of Bengal, Behar, and Orissa, and confirms the jaghir to Clive.
1767. Hyder Ali assumes rule of Mysore.
1767. Hyder Ali's first war with E. I. Co.; his troops approached Madras, and 4th April 1769 peace declared, *in statu quo*.
1780, 21st July. Hyder invaded the Karnatic, and plundered Porto Novo and Conjeveram; and 10th September destroyed Colonel Baillie's detachment at Perambakam.
1781, 18th February. Hyder destroys Colonel Braithwaite's force on the banks of the Colerun, 40 miles from Tanjore.
1781, July 1st. Hyder Ali defeated at Porto Novo by Sir Eyre Coote.
1782, 7th December. Hyder, aged 80 years, died at Chitore.
1764. Mutiny on account of money claims.
1766, 1st January. Double batta abolished, and officers mutinied.
1771. May. Dehli emperor places himself under Mahratta protection; in Mahratta hands he became a nominal sovereign.
1773, 30th August. Narain Rao Peshwa murdered, and Ragonath Rao succeeded
1773. Act of Parliament made Madras and Bombay subordinate to Bengal; appointing a Court of Directors for four years, with a Governor-General in Bengal, upon an annual salary of 2½ lakhs of rupees, with a Council of four members on one lakh each, a Supreme Court in Calcutta on the model of the Westminister Courts of Law, with a Chief Justice and three Puisne Judges. A monopoly of the trade with China granted.
1801, 3d Septr. Madras Supreme Court of Judicature instituted.
1827, 9th July. Natives of India authorized to sit as jurors.
1773. Value of British goods exported was £489,803.
1780. " " " £401,166.
1772. Net revenues, Bengal, Behar, Orissa, £2,126,766.
1785. " " " £2,072,963.
1797. " of India £8,059,000.
1805. " " £15,403,000.
1774. Philip Francis, a member of Council, Bengal. 1780, wounded in a duel with Warren Hastings.
1781. Warren Hastings founded Madrassa at Calcutta.
1774, 23d April. 40,000 Rohillas under Hafiz Rahmat defeated by army under Colonel Champion.

EAST INDIA COMPANY.

1775, 1st January. Salsette taken.
1775. Alexander Wynch, governor of Madras, recalled.
1776, 1st March. Treaty of Purundhar.
1778. Bhopal Nawab aided General Goddard. 1818, a protecting treaty formed.
1778. First printing in Bengali.
1780. Salt monopoly resumed.
1780, 4th August. Captain Popham detailed Captain Bruce, who took Gwalior. Again taken, 1804. Granted to Sindia.
1780. Press printing in Calcutta. (Censorship abolished, 19th August 1818; Law restricting, 1823; Freedom, by Sir Charles Metcalfe, 15th September 1835; again restricted, 13th June 1857; again free, 13th June 1858.)
1780, 11th December. Bassein surrendered to General Goddard.
1781. Nawab Muhammad Ali assigned the Karnatic revenues to E. I. Co. 1801, title became nominal. 1855, last Nawab died.
1781-1819. Three Mahratta wars.
1st, ,, ,, Jan. 1799 to 13th Oct. 1781.
2d, ,, ,, 1803-4.
3d, ,, ,, 1817-1819.
1781, March. Cholera destroyed about 3000 of Colonel Pearse's army, marching southwards; cholera recurred Nov. 1781 at Negapatam; again in 1786, and again in 1817.
1782-1833. Malcolm, Sir John, G.C.B. and K.S.I.
Born, ... 1769
Cadet to Madras, ... 1782
Envoy to Persia, ... 1799-1801
Private secretary to Governor-General, . . 1801
Resident at Mysore, ... 1803
Envoy to Persia, ... 1808
Second in command at Mehidpur, 21st Dec. . 1817
Governor of Bombay, 1st November 1827 to 31st March 1831
1782. Tipu succeeds his father.
1788, 8th May. Tipu descended the Ghats. 1790, first campaign under General Abercrombie. 1791, second campaign under Lord Cornwallis; Pettah of Bangalore assaulted, 7th March 1791; Bangalore taken, 21st March 1792. 1792, third campaign. 6th February, lines of Seringapatam attacked and won, and peace declared 24th February 1792, Tipu ceding half his territories, paying 3 kror and 30 lakhs, and Tipu surrendered two sons as hostages; they were restored 1794; again surrendered 5th May 1799, on the fall of Seringapatam.
1799, 5th March. General Harris, in command of army, entered Mysore.
1799, 4th May. Seringapatam stormed.
Lieut. Lawrence led forlorn hope of left column of H.M. 74th at storm of Seringapatam; father of Sir Henry M., of Lord, of General A. W., and of G. St. P. Lawrence; Tipu fell.
1783, 26th January. General Mathews occupies Bednore, and obtained about £801,000, but surrendered to Tipu 30th April, and sent to prison in Mysore. In 1763, Hyder took it, and obtained £12,000,000.
1783, 20th January. Negapatam bought from Holland.
1783, 25th June. Bernadotte wounded in a sally of the Cuddalore garrison.
1783. E. I. Co. Directors placed under Board of Control; a secret Committee of Directors formed; Tanjore conquest disapproved.
1784. Bengal Asiatic Society established.
Founded by Sir William Jones.
Cornwallis, Marquis of, born 31st December 1738.
Governor-General, 12th Sept. 1786 to 28th Oct. 1793
Governor-General, 30th July to 5th October 1805
Captured Bangalore, 20th March . . . 1791
Took Hooliordrug, 18th June . . . 1791
Besieged Seringapatam, 5th February, and signed a treaty with Tipu, ... 1792
Made decennial settlement perpetual in Bengal, 22d March 1793
Quitted India, 28th October 1793
Returned, and died at Ghazipur, 5th October 1805
1788. Guntur surrendered to the E. I. Co., according to the firman of the king of Dehli in 1765.
1793, 22d March. Proclamation declaring the permanent settlement of Bengal, Behar, and Orissa, enacted in Regulation 1 of 1st May 1793.
1793, 1st May. Hindu and Mahomedan law officers appointed.
1793. Sir John Shore (Lord Teignmouth), Governor-General.
1793. Charter renewed till 1st March 1814. Advise Lord Cornwallis to inquire into the zamindars' rights.
1798, 17th May. Lord Mornington (afterwards Marquis Wellesley) reached Calcutta as Governor-General.
1799. Major-General Baird commanded the assault on Seringapatam, 4th May.
1799. Tanjore administration undertaken by the E. I. Co., 20th October.
1799. Canara under E. I. Co.
1800, 13th March. Nana Farnavis died.
1801. Expedition to Egypt.
1801. Treaty with Oudh; Allahabad ceded to the E. I. Co.
1802, 25th March. Peace of Amiens.
1802, 20th August. Sacrifice of children at Saugor prohibited.
1802, 1st January. Marquis Wellesley sent in his resignation, but was requested to remain.
1803, 31st July. Third Mahratta war; their armies 250,000 strong, and 1000 guns, under Gen. Perron.
The following were events:—
1803, 29th August. Lord Lake (born 1772); victory over Perron at Aligarh.
4th September. Carried the fort at Aligarh.
12th ,, Battle of Dehli, and released blind Shah Alam.
18th October. Lake took Agra.
1st November. He won battle of Laswari.
1804. Raised to peerage.
17th Nov. Defeated Holkar at Farrakhabad.
13th November. Won battle of Deeg.
24th and 25th December, Deeg fort taken.
1805. Besieged Bhurtpur; stormed it, 21st January; 21st and 22d February, lost 2910; failed. (1826, 18th January, taken by Lord Combermere.)
1807, 4th November. Lake created Viscount.
1808. Died.
1803, 8th to 15th October, Colonel David Ouchterlony defended Dehli.
1803, 12th Aug. Gen. Wellesley took Ahmadnaggur.
23d September. Won Assaye.
28th November. Won Argaum.
14th December. Won Gawilghar.
16th October. Col. Stevenson took Burhanpur.
21st October. Took Asirgarh.
1803, 30th December. Peace treaty.
1803. Broach ceded by Sindia to E. I. Co.
1803, 30th December. Bulandshahr ceded to E. I. Co.
1805. Fort William College established by Marquis Wellesley; (abolished, 1854.)
1806, 10th July. Colonel Gillespie suppresses Vellore mutiny.
1807. Lord W. Bentinck recalled from Madras 11th September.
1807, 17th September. Sir John Cradock, Commander-in-Chief, Madras, recalled.
1809. Mutiny of Madras officers, and at Chittuldrug of native regiments.
1809, 13th February. Ajygarh surrendered.
1809. M. Elphinstone's embassy to Kābul.
1809, 25th April. Treaty with Ranjit Singh, who died July 1839.
1809–1846. Metcalfe, Lord Charles, Bart., arrived, 1801
Envoy to Ranjit Singh, 1st September 1808; treaty, 25th April 1809
Resident at Gwalior, ... 1810
,, Dehli, ... 1811
,, Hyderabad, ... 1820
Governor-Gen. 20th March 1835 to 4th March 1836
Lt.-Governor N.W. Provinces, May . . 1836
Quitted India, 15th February . . . 1838
Governor of Jamaica; Governor-General of Canada; died 5th September . . . 1846
1811. Batavia, surrender of; Java taken. November, Sir George Barton recalled.
Lord Minto. Governor-General, 1807; recalled, 11th November 1811.

1812, 2d February. Kalinjar in Bundelkhand stormed.
1813, 4th October. Earl Moira Governor-General and Commander-in-chief.
1813, 21st July. Act 53 Geo. IV. c. 155, E. I. Co.'s privileges renewed for 20 years; trade to India thrown open; territorial and commercial affairs to be kept distinct, and accounts rendered.
1814, 13th August. Convention to restore to Netherlands all its colonies except Cape of Good Hope and some West India Islands.
1815. Dehra Doon taken by the E. I. Co.
1814–15–16. Gurkha war. In 1814, 31st October, Gen. Sir R. R. Gillespie fell at Kalanga; 27th November, second attack on Kalanga failed; but captured 1st December 1814. 20th (?) December, failed attack of Jytak; peace treaty signed 5th March 1816. Almora, Garhwal, and Kamaon ceded to British.
1815. Bengal sepoys mutiny at Java.
1817–1819. Third Mahratta war—
Chiefs of Pindaris of Sindia Shahi Pindari were Cheetoo, Karim Khan, and Dost Muhammad, with 18,000 horse, 1300 foot, and 15 guns. The Holkar Shahi, 3000 horse, 200 infantry, and 3 guns. British army and contingents assembled 116,464, and 295 guns, under Marquis of Hastings in Hindustan, and under Sir Thomas Hislop in the Peninsula, took the field in 1817.
1817, 5th November. Battle of Kirkee.
1817, 27th November. Battle of Seetabuldee.
1817, 21st December. Battle of Mahidpur.
1817, 19th December. Tulasi Bai, regent, seized by her troops; 20th, beheaded.
1818, 1st January. Corygaum defended.
1818, 20th February. Battle of Ashtee.
1818, 3d June. Baji Rao Peshwa surrendered, and pensioned 8 lakhs.
1817. Cholera morbus broke out in the Marquis of Hastings' army, and destroyed one-tenth of it.
1817. Ajmir ceded to the E. I. Co.
1818. Kandesh annexed; Dharwar and Baitul ceded.
1818. Appa Sahib dethroned.
1817, 5th November, to 13th May 1819. Pindari and Mahratta war lasted; 134 officers, and 3042 of all other ranks, killed and wounded.
1819. Rajput states, treaties with.
1820, 25th November. Dwarka in Okamundal taken.
1824. Barrackpur mutiny. (1857. A second time.)
1825, 10th December to 18th January 1826. Viscount Combermere; successful siege of Bhurtpur.
1823, 15th July. Sir David Ouchterlony died at Meerut, age 68.
Burma, 1753 to 1853—
1753. Alompra occupied Ava.
1757. Alompra granted Negrais Island to British.
1759, Most of the settlers murdered.
1760, May. Alompra died.
1824, March 5th, to January 26th, 1826. Burma war; peace treaty, 24th February 1826; cost 14 kror. Second war, 7th May 1852 to 10th June 1853. 1826, Tenasserim and Assam ceded.
1828. Persia and Russia treaty established the Arras (Araxes) as the boundary line.
1829, 7th December. Suttee abolished; and abolished in the Panjab and Rajputana, 1847.
1833. Dhulip Singh born; 1843, succeeds to the Panjab throne; deposed, 1849.
1833, 18th August. E. I. Co.'s charter renewed; as traders, to cease from April 1834; their British Indian territories to remain under the company till the 30th April 1854. The superintendence and control in India, civil and military, to be vested in a Governor-General and Councillors, with powers to legislate for India, and his laws and regulations to have the force of Acts of Parliament. A law commission appointed to inquire into existing laws, courts of justice, police; and British subjects allowed to reside without licence in India, and to purchase land. Persons of all colours, religion, or country admissible to any office or employment under the Company.
1835, 15th September. Freedom of the press.
1835, March. Flogging abolished in native army.
1835, 12th August. Lord Auckland appointed Governor-General of India; served 4th March 1836–1842.

EAST INDIA COMPANY.

From his time up to the present, the wars on the N.W. Frontier have been continuous.
1835, 4th Feb. Medical College, Calcutta, established.
1836, 27th January. Begum Sumroo died at Sirdhana, aged 87.
1836, 29th September. Chamber of Commerce formed at Madras.
1834–1844. Keane, Lord, an officer of the British army (born in the year 1781). Commander-in-chief, Bombay army, from the 2d July 1834 to 14th February 1840. Created a Baron of the empire, December 1839. Died 24th August 1844.
Afghanistan—
1839, 8th May. Shah Shuja replaced on the throne.
1839, 23d (12?) July. Ghazni stormed. 6th August 1839, Kábul occupied. 13th November 1839, Kalat taken.
1840. Dost Muhammad Khan surrenders. 1841, 2d November, Outbreak at Kábul. 1841, 11th December, British agree to evacuate Afghanistan. 1841, 23d December, Sir William Macnaghten assassinated. 1842, 6th January, British begin to retire. 1842, 13th January, 4500 fighting men and 12,000 followers totally destroyed; Dr. Brydon alone reached Jalalabad. 1842, 6th April, Khaibar pass forced. 1842, 8th September, Afghans defeated at Jugdallak.
1842, 7th April. Sale defeats Akbar Khan at Jalalabad.
1842, 16th September. General Pollock reoccupies Kábul. 1842, 29th September, Istalif taken. 1842, 17th December, British army returns to Firospur
1839. Bakkur fortress temporarily ceded to E. I. Co.
1843, Sind conquered.
Viscount Gough—
1837. Commands Mysore division.
1838–1842. Commander-in-chief in China.
1840, 5th July. Chusan captured.
1841, 25th May. Canton taken.
1841, 1st October. Chusan recaptured.
1841, 1st October. Chin-hae captured.
1841, 13th October. Ning-po captured.
1842, 18th May. Cha-poo captured.
Shang-hai captured.
1842, 21st July. Chin-kiang-fu captured.
1842, 17th August. Peace.
1843. Commander-in-chief in India.
1843, 29th December. Defeated Mahrattas at Maharajpur.
1845–46. Sikh campaign.
1845, 18th December. Moodkee.
1845, 21st December. Firozshah.
1846, 28th January. Aliwal.
1846, 10th February. Sobraon.
1848, 21st November. Ramnagar.
1848, 3d December. Sadoolapur.
1849, 13th January. Chillianwalla.
1849, 21st February. Gujerat.
1849, 24th March. Sikh army surrendered at Rawal Pindi.
1845–46, at Moodkee, Firozshah, Aliwal, and Sobraon, 6263 of all ranks killed, wounded, and missing.
1848–49, at Ramnagar, Sadoolapur, Chillianwalla, Multan, and Gujerat, 10,788 killed, wounded, and missing.

1857. Lawrence, Sir Henry—

Political agent, Afghanistan,	1842
Resident at Ajmir,	1853
Resident at Oudh,	1857
Defeated at Chinhut, 30th June	1857
Died from wound, 4th July	1857

1830-1881. Lawrence, John, Lord—

Arrived in India,	1830
Chief commissioner, Panjab,	1853
K.C.B. in	1856
G.C.B. in	1857
Baronet,	1858
Raised to the peerage,	1869
Governor-General and Viceroy,	1864-1869

1841. Lieutenant-Colonel Sir H. Edwardes, born January 1820; arrived in India January 1841; subjugated the valley of Bunnu, 1848; defeated Mulraj, May 1848.

1843, January. Imamghar in the Indian desert taken by Sir Charles Napier.
1843, 17th February. Meeanee won by do.
1843, 24th March. Dubba won by do.
1844, 6th May. Lord Ellenborough, Governor-General of India, dismissed their service by the Court of Directors.
1846. Balasore sold by the Dutch.
1848, 3d December. Sadullahpur battle.
1848, January, to 1856. Dalhousie, tenth Earl and first Marquis, Governor-General of India, arrived 14th January 1848; 2d Panjab war on the 29th March 1849; annexed the Panjab, created Marquis, 1849; annexed Satara, 1849; annexed Pegu, 20th December 1852; annexed Nagpore, February 1855; annexed Oudh, 7th February 1856; annexed Tanjore and Karnatic, 1856; left India, 6th March 1856.
1851. Railways begun in India.
1851, December. Telegraph lines opened.
1854, 24th March. Electric telegraph opened in India.
1854, 22d April. All real and personal property of Honourable East India Company vested in the Crown (which becomes liable for all claims, debts, contracts, etc.) since 1793, but is managed by the company. Dividend is 10½ per cent., and may be redeemed any time after April 1784. Company stock is £6,000,000. Law of residence, and right to employment, etc., 3 and 4 W. IV. c. 85, ss. 87.—No native of the said territories, nor any natural-born subject of His Majesty resident therein, shall by reason only of his religion, place of birth, descent, colour, or any of them, be disabled from holding any place, office, or employment under the said company.
1855. Civil service thrown open to competition.
1857. Mutiny and rebellion.
1857, July. Nana Rao defeated at Bithur, and his palace burned.
1857, 15th July. Massacre at Cawnpur.
1857. 2d July to 10th October. Agra besieged by Nemuch mutineers.
1857, 25th September. Sir Henry Havelock, Baronet, relieved Lucknow; created a baronet 26th November 1857; died 24th November 1857.
1858. Jhansi annexed by E. I. Co.
1858. Andaman Islands a penal settlement.
1858, 1st November. At a grand darbar held at Allahabad, was sent forth the royal proclamation, which announced that Queen Victoria had assumed the government of India, and thus closed the E. I. Co.'s career.
1859, 1st Nov. Dwarka recovered from the Waghirs.
1860. Sir Charles Edward Trevelyan, Governor of Madras, recalled.
1877, 1st January. Queen Victoria was proclaimed Empress of India at a darbar of unparalleled magnificence, held on the historic 'ridge' overlooking the ancient Mughal capital, Dehli; Queen of the United Kingdom of Great Britain and Ireland, Empress of India.

From the date of that small factory grant in 1613 at Surat, the English East India Company grew, in India, up to the year 1857. In that interval they decided the fate of kings, emperors, and rajas, and had drawn under their direct rule 150,000,000 of people, with 70,000,000 more under allied sovereigns. Their dominion was at length in 1858 absorbed under the administration of the British Crown, consequent on a great revolt of the native sepoy army of Bengal, during which the predatory races of the north, and the dissatisfied amongst the nobles, took the opportunity to plunder and strive for independence, and during their efforts much innocent blood was shed, and many horrors enacted. In the century of their rule, however, amongst the servants of the company, there had been many great statesmen, many eminent commanders, and many learned men. For one hundred years large parts of India had been under their sway. During their rule they put down predatory warfare everywhere.

EAST INDIA COMPANY.

They established security of person and property from governmental aggression.

They introduced civil and religious liberty, instituted colleges, schools, museums, and polytechnic institutions for the introduction of a pure and rational philosophy, and the dissemination of knowledge.

They instructed the young in a knowledge of the medical science of the West.

The English language was made known to them. They formed and introduced the Hindustani language as a lingua franca. Molesworth's Mahratta Dictionary, and the works translated and published by Colonel Jervis and others, Morris' Telugu Dictionary, Campbell's Telugu Dictionary, Gilchrist's Hindustani Dictionary and Grammar, Shakespere's Hindustani Dictionary, have been published; Richardson's Burmese Dictionary, Morrison's Chinese Dictionary, and works on botany, natural history, medicine, and physical science.

They established printing and newspapers, and gave the freedom of the press.

They translated into many languages—the Bible, a book of pure morals.

They abolished mutilation and sanguinary punishments.

They abolished slavery in most parts of India.

They abolished sati, human sacrifices, and infanticide.

They put down thuggi and its kindred iniquities.

They placed the remotest parts of India in communication with the whole civilised world.

They abolished transit duties.

They formed roads and bridges on a scale unknown to India under any previous government.

They gave India the benefits of steam communication on its shores and rivers, and of railroads.

They introduced agricultural and horticultural societies for the improvement of cultivation and produce.

They established commercial chambers and banks, and displaced the innumerable coins of its former rulers by a new coinage.

They formed great dams on wide rivers, and excavated great canals for irrigation and traffic.

The English East India Company began as peaceable merchants, but, as is the custom of the East in all countries without police, they retained armed guards over their factories, which led on the one hand to defensive and aggressive acts, and, on the other, tempted needy soldiers of fortune to try to plunder them or to seek their aid,—acts which led them by degrees to the acquisition of their vast territorial possessions.

They formed a great and cheap army, about 300,000 strong, from amongst the conquered races, and with them they made conquests in India, in China, in Sind, in the Panjab, in Afghanistan, in Aden, in Burma, in Assam, in Arakan, and Tenasserim, and twice took Egypt.

They formed a powerful navy, which gave to the Government a great influence over the lawless tribes that fringe the coasts of the Red Sea and the Persian Gulf, and the east coast of Africa. Their work was partly war, partly political, and partly scientific, and they did thoroughly and well whatever fell to them to perform.

Their Courts of Sadr and Foujdari Adalat, their Supreme Courts of Judicature, with Judges and Session Judges throughout the land, administered

to each race their own laws, and a great body of magistrates, and Courts of Small Causes, furnished the people with the means of obtaining justice, and gave the Government the means of repressing crime, with the blessing of internal peace and progressive civilisation.

The service of the state was opened to every Indian race, it having been provided by Acts 3 and 4 W. IV. c. 85, p. 87, 'That no native of the said territories, nor any natural-born subject of His Majesty resident therein, shall, by reason only of his religion, place of birth, descent, colour, or any of them, be disabled from holding any place, office, or employment under the said company.'

EAST INDIAN is a term which has been adopted by all classes in India, to distinguish the descendants of Europeans and native mothers. Eurasian and Indo-Briton were for a short time in use, but have ceased to be employed; and other names, such as Half-caste, Chatikar, and Chi-chi by the Hindus and Mahomedans of India, are derogatory designations. Chatikar is from Chitta, trousers, and Kar, a person who uses them. The Mahomedans equally wear trousers, but concealed by their long outer gowns. The East Indians are also known as Farangi, a person of Europe, similarly as Hyderabadi, Bengali, and Hindustani are employed for natives of Hyderabad, Bengal, or Hindustan. The humbler East Indians, if asked their race, reply that they are Wallandez or Oollanday, which is a modification of Hollandais, the name having been brought down through the seventeenth and eighteenth centuries from the Dutch, who were amongst the first who trafficked with the East. East Indians have, in India, all the rights and privileges of Europeans, and might advantageously be so styled. They are of French, Dutch, Danish, Spanish, Portuguese, and British descent; but many of those who claim a Portuguese origin—Xaviers, De Castellas, etc.—are merely descendants of converts to Christianity or of household slaves of Portuguese officers. East Indians are chiefly employed as clerks in public offices in all the subordinate civil departments of the British Indian Government.

East Indian is a commercial term applied to distinguish many vegetable products of that region from others of similar character of other countries. East Indian arrowroot, bird-pepper, copal, ebony, galls, gum, indigo, myrrh, screw tree, tacamahaca.

EAST INDIES. This geographical term is used to distinguish the tropical countries in the eastern parts of the world, from the West Indies, composed of the islands lying in the tropics between North and South America. The term is used by the British, the Dutch, French, Portuguese, and Spaniards, to indicate their respective territorial possessions in the East. The West Indies belong principally to Great Britain, but to possess the East Indies has been an object of ambition to western races from prior to historic times. The first great inroad of strangers into what is now British India, was that of the Eastern Aryans, about 3000 to 1500 years before Christ, who now form the brahmanical tribes of British India, —intellectual men, but without territorial possessions. Semiramis, B.C. 1200, moved with a great army, and entered India from the N.W., but was defeated and driven back with great slaughter. Alexander of Macedon approached India from a similar N.W. route, but he stopped short in the Panjab, moved southwards along the right bank of the river Indus, and then crossed the Baluchistan desert to Babylon, where he died. Many Scythic races, of whom, however, little is known, appear to have advanced in India to the neighbourhood of Gujerat, in the early centuries of the Christian era. The Arab khalifs who succeeded Mahomed, Mahomedans from Ghazni, from the vicinity of the Oxus, and from Persia, obtained possession of great parts of the country now designated British India, the British being the present rulers over much of the lands which previous conquerors obtained.

The *Dutch East Indies*, or, as that nation calls it, Nederlandsch Indie, Netherlands India, are comprised in the great islands of the Eastern Archipelago from Sumatra eastwards. They are the rulers or paramount power of five-sixths of the whole Eastern Archipelago.

The *Spanish East Indies* are chiefly the Philippine Archipelago. The chief town of Manilla was founded in A.D. 1581, and they have continued in undisturbed possession ever since.

The *Portuguese*, who of all the Europeans were earliest in the field of conquest, now hold only 1086 square miles in the small settlements at Goa, Daman, Diu, and Macao.

The *French*, who in the 18th century strove for supremacy with the British, now hold Pondicherry, Mahe, Chandernagar, Karikal, and Yanaon, with Annam in Further India.

The *Danes*, until early in the 19th century, had small patches of territory at Serampur, Negapatam, and Chinsurah. There are many Rajput, Hindu, and Mahomedan rulers in British India. Ceylon is a British colony, and Burma, Siam, Acheen, and other states are under independent rulers. See British India; India.

EASTWICK, EDWARD B., of Bombay Army, Assistant Political Agent, Kattyawar, Sind, 1839-1842, was Professor of Hindi, Hindustani, and Mahrati, at Haileybury. Author of Vocabulary of the Sindi Language;—Dry Leaves from Young Egypt, London 1847-1852;—Translator of Bopp's Comparative Grammar, and of various standard Hindustani and Persian works;—Editor of the Autobiography of Lutfullah;—On the Revenues of Khyrpoor; On the Pedigree of the Amirs of Sindh, published in Parliamentary Paper;—translated the Kissah-i-Sanjan, also the Zartash-namah; —wrote on Alore and Rohri;—translated Schiller's Revolt of the Netherlands; Memoir of Pir Ibrahim Khan; Bagh-o-Bahar, Anwar-i-Soheili, Gulistan;—Author of Handbook of India, in four volumes, and of the Kaisar-namah-i-Hind, in three volumes folio;—was private secretary to Lord Cranbourne when Secretary of State for India; was Member of Parliament for Penrhyn and Falmouth, 1868-1874.

EASTWICK, CAPTAIN WILLIAM JOSEPH, was born in 1808, and went to Bombay in 1827; was with the field force under General Welsh at Kolhapur, and in the S. Mahratta country. He was the Political Officer attached to the army of Lord Keane in 1838, and accompanied it through Sind. He was entrusted with the negotiation of the treaty of 1839 with the Amirs of Hyderabad, by which the Indus was thrown open to commercial enterprise, free of all imports and vexatious interference. He held political charge of the districts at the foot of the Bolan pass, constituting the

base of British military operations in Afghanistan. He was appointed Acting Resident in Sind. In 1847 Captain Eastwick was elected to a seat in the East India Direction, and in 1858 was appointed to the office of Deputy Chairman.

EBONY.

Yendike, Tai, . .	BURM.	Ebenus, ...	LAT.
Wuh-mu, Wu-pi,	CHIN.	Kayu-arang, . .	MALAY.
Ebben-hout, . .	DUT.	Ebenowoederewo, .	RUS.
Ebene, ...	FR.	Kalu vere, . .	SINGH.
Ebenholz, . . .	GER.	Ebon, ...	SP.
Ebenos, ...	GR.	Kaka tatee, . . .	TAM.
Hobnem, . . .	HEB.	Atcha maram, . .	,,
Tendua, Abnus, .	HIND.	Atcha manu, . .	TEL.
Ebeno, ...	IT.	Toomi-chava kara, .	,,

A black wood, exceedingly hard and heavy, of great durability, and susceptible of a high polish. It is exported from Upper Egypt, Abyssinia, Zanzibar, Madagascar, Mauritius, Ceylon, India, and Jamaica. The ebonies of South-Eastern Asia are obtained from several species of Diospyros, Dalbergia, and Bauhinia, growing in the Mauritius, Ceylon, in several parts of the Peninsula of India, as Coimbatore, Malabar, Canara, the Dekhan, in the Circars, Ganjam, Cuttack, and Gumsur; also in Assam, the Malay Peninsula, in Penang, Siam, and eastwards through the Asiatic Archipelago to the Philippine Islands. True ebony is of so deep a black, as to be used to personify blackness. But woods sold under this name have also reddish, greenish, or yellowish hues, and are distinguished in commerce as red, green, and yellow ebonies, though these are in much less esteem than the ebonies which are jet black, free from veins, and close-grained. Mottled ebony is furnished by some species of Excœcaria, Nectandra, and Jacaranda. The jet black kinds are employed for ornamental furniture, cabinet and turnery work, for rulers, handles for doors, knives, pianoforte keys, philosophical, musical, and surgical instruments, mosaic work and inlaying, though cheaper woods, dyed black, are frequently substituted. It is much affected by the weather, on which account it is seldom used in the plank solid. It is mentioned in Ezekiel xxvii. 15, but in the plural, when the men of Dedan are described as bringing horns of ivory and ebony. Herodotus (iii. 97) mentions ebony as part of the presents brought in considerable quantities to the king of Persia by the people of Ethiopia; and Dioscorides describes two kinds, one Ethiopian, which was considered the better, and the other Indian, which was intermixed with whitish stripes and spotted. Diospyros ebenum, *Retz*, affords the most valuable ebony of Ceylon; but other allied Indian species, as D. melanoxylon, afford excellent cabinet wood. D. quæsita of Ceylon affords the beautiful calamander wood. Other Indian species, however, yield ebony, characterized by its extremely dark colour and hardness, the heart-wood (duramen) of the tree; the sap-wood (alburnum) being white and not durable.

The ebonies of the Mauritius, Ceylon, and the south and east of Asia are equal to those of any other part of the world. The ebony in the south of the Peninsula of India is chiefly obtained from Coorg and Canara, from various species of Diospyros, and is of a superior description, being perfectly black in colour. Smaller pieces are procured from Cuddapah, Salem, Nuggur, etc., but there is no steady demand, though for ornamental cabinet work it is peculiarly fine-veined. That of Ceylon, from the Diospyros ebenaster, is of great value. And another heart-wood, that of the Kadoem beriye, or bastard ebony of western Ceylon, also from species of Diospyros, is occasionally met with of extraordinary beauty. The ebonies of the Palghat and Coimbatore districts are supposed to be from species of Diospyros, ebenaster, and Bauhinia. In none of the trees is the entire bole black, only the heart-wood, the outer and white wood being the tendua of the Mahrattas. The ebony tree of the Malabar forests, Diospyros melanoxylon, is also found sparingly in those of N. Canara below the Woolwa Ghat, and near Meerjan inland. Ebony is procurable of a very superior quality in the hill zamindaries of the Northern Circars, particularly in the Ganjam district; also inland from Ellore in the Masulipatam district. Logs of Diospyros ebenaster yield an ebony richly variegated with bright brown stripes and mottled, similar in appearance to calamander wood, which also is from species of Diospyros. The Karens have distinctive names for four different species of Tenasserim ebony trees,—the salt water swamp ebony, the water ebony, the yellow ebony, and the true ebony. Under the Burmese term yendaik, the wood of two different trees is sometimes seen,—one a species of ebony, and the other a leguminous tree, which, according to the descriptions of the Karens, is a species of dalbergia, and the wood resembles the blackwood of Hindustan. There is an inferior kind of ebony often seen at Moulmein, from a species of Diospyros. A similar wood at Tavoy is often denominated iron-wood. The Burmese ebony, known as tai, is found in the direction of Shooay-Geen, but is very scarce.

The ebony used in China is chiefly imported from the Straits, but Diospyros melanoxylon and D. ebenus grow in the island of Hainan, Yung-pehting in Yunnan and in Kwang-si. An inferior kind of ebony, known as camagon in the commerce of China, is supposed to be a product of the D. tomentosa. West Indian ebony is furnished by Brya ebenus? *A. de C.*, a small tree of Jamaica. It takes a beautiful polish, and is used for making walking-sticks, inlaying, etc. Bastard ebony of the Brazils is the Jacaranda mimosifolia. Ebony sells in England at £5 to £10 a ton. The exports of it from India from 1874–75 to 1879–80 ranged in value from Rs. 3558 to Rs. 15,817.—*Mat. Med.; Smith, Chin.; Drs. Gibson, Wight, Mason, Tredgold, Holtzappfel, Faulkner, Crawfurd, Thwaites, Voigt; Captain Dance; Mr. Rohde; Eng. Cyc.; F. v. Mueller.*

ECBATANA lay near the Zagros mountains. It was also called Achmetha, and was the chief city of Media. According to Herodotus, Ecbatana was built near the close of the 8th century B.C., by Dejoces, the founder, or (as other authors say) the restorer of the Median monarchy. But, according to Diodorus Siculus, orientals not only described it as the capital of the first Median monarchy founded by Arbaces, but also as existing prior to the era of Semiramis. That queen in her royal progress arrived at Ecbatana, a city situated in a plain, and there built a magnificent palace. Alexander deposited in it the treasures taken from Persepolis and Pasargada, and one of the last acts of his life was a visit to Ecbatana. Williams (Essays, p. 9) affirms that the ancient Ecbatana is the modern Isfahan, the capital of Irak

Ajami. But Sir William Jones and the chief French orientalists place Ecbatana at Tauris; and Galius, who has been followed by D'Anville and later geographers, at Hamadan. Media for the most part is high and cold; such are the mountains to the east of Ecbatana, the mountains near Rhagæ and the Caspian Gates, and thence to Matiana and Armenia. It is usually now thought to be the modern Hamadan.—*Williams' Essays*, pp. 2-67; *Strabo*, xi. 13.

ECHALAT, KHASSYA, is the Nerium piscidium, *Roxb.*, the Wrightia piscidia, *G. Don.* Its bark yields a useful fibre. Steeped in water, the fishes die.—*Voigt.*

ECHENEIS NAUCRATES, the Indian sucking fish. E. remora, *Linn.*, the remora or sucking fish, is usually found attached to the shark. They are 6 to 12 inches long. Macgillivray says (pp. 237-8) that E. remora caused much annoyance to the fishermen by carrying baits off hooks, and appeared always on the alert, darting out in a body of 20 or more from under the ship's bottom when any offal was thrown overboard.

ECHINOCARPUS DASYCARPUS. *Benth.* A timber tree of Darjiling hills.

ECHINOPS ECHINATUS. *Roxb.* Oont-ka-tara, HIND. Camel thistle. Very common in Rajwara; camels consume it readily. Said to be also a native of Mysore. Dr. Hoffmeister says this plant occurs among the flora of the villages from the Errengkhal pass to Shipkie in Chinese Tartary.—*Roxb.*

ECHITES, a genus of shrubs and trailing plants of the natural order Apocynaceæ. Dangerous lactescent plants, of no known use.

ECHIUM GRANDIFLORUM, one of the Boraginaceæ. E. simplex is the bugloss.

ECITON, a genus of ants. E. rufonigrum, worker, length about 11-24ths of an inch; is very common in the Karnatic; makes its nests in boles of trees, old palings, bamboo rafters, and such like. It does not care for sweets, is never seen on flowers, but devours dead animal matter. It stings very severely. E. nigrum, worker, length 9-24ths of an inch, rare in Malabar, but tolerably common in parts of the Karnatic; same habits as the last. Females winged. E. rufipes, worker, length 11-48ths of an inch. E. minutum, worker, about 1-6th of an inch long, is found in the Karnatic and in Malabar on trees.—*Jerdon.*

ECLIPSE.

Munkasif; Munkhasif, AR.	Ecclissi, ... IT.
Finsterniss, ... GER.	Grahana, . . SANSK.
Girhan, ... HIND.	

Of Sun—Nay-kyat-hgying; of Moon—La-kyat hgying.

Celestial observations were made at Babylon B.C. 2234. The Chinese wrote of 36 eclipses, of which two are uncertain, but of the others there is no doubt, according to the missionary Gaubil, and the first mentioned by them was observed B.C. 2155. Varaha-mihira, a Hindu astronomer of the 6th century A.D., correctly described eclipses of the moon and of the sun. He says, 'In an eclipse of the moon, she enters the shadow of the earth; in a solar eclipse she obscures the sun by her shadows. Hence the commencement of a lunar eclipse does not take place from the west side, nor that of a solar eclipse from the east.' But at the present day, amongst ordinary Hindus, an eclipse is still considered to be caused by a snake's endeavouring to eat up the luminary. The Hindu myths on this point vary; but usually the Iraku or black, and Keathu or red, snakes, two giants with snake heads who seized the ambrosia, are mentioned. Another myth relates that Rahu, once a chief of the Asuras, who, from having obtained some of the ambrosia, now dwells immortal in the sky, but from time to time darts out on the sun or moon and seizes them. These myths are connected with the myth of the vaishnava Hindus about the churning of the milk-sea ocean. When the Deva and the Asura, with Mount Mandara as a churning rod propped on the god Vishnu as the tortoise Kurma, and using the serpent Seaha as a twirling thong, produced the Chauda-ratna, fourteen precious products called gems. Of these fourteen products was one of which Rahu by stealth obtained a portion, and became immortal. Another product was the poison, or medicine, which the god Siva, to protect mankind, drank up. On the occurrence of an eclipse, modern Hindus, to escape from the poison, everywhere bathe themselves. On the morning of the eclipse of the sun in 1868, the Lucknow train conveyed into Cawnpur no less than 27,000 passengers to bathe in the Ganges. The learned amongst the Hindus are perfectly acquainted with the causes of eclipses. See Ketu; Rahu.

ECLYPTA ERECTA, Bhangra, dodak, nigand, bamaro; juice used to dye hair black, also used in elephantiasis.—*Powell*, i. p. 359.

EDAGAI, Edagai Kula, also Edangai, meaning the Left-hand race, or seekers, is, amongst the Tamil and Teling people near Madras, a social classification of certain traders and artisans, who in the early part of the 19th century assumed an importance demanding the care of the police. The sections are nine in number, viz.:—

1. Panchala, comprising five subdivisions, viz. Kammaranu, or blacksmith; Badage, or carpenter; Kansagar, or brazier or coppersmith; Kallurtiga, or mason; Akasale, or goldsmith.
2. Berisethi, traders.
3. Devangada, weavers.
4. Ganigar, oil-makers.
5. Gollur, accountants of treasuries.
6, 7. Paliwan and Palawan? two tribes of cultivators, perhaps for Palligavanu, a villager, a peasant.
8. Bedar, an aboriginal race of Mysore and Central Dekhan.
9. Madiga, a worker in leather, a tanner, a shoemaker. The last is generally most active in contests with the Right-hand castes.

EDDANGALLI or Yeddangali. MALEAL. A dry grain measure in use in Malabar, cylindrical in form, 2⅝ inches high, 6½ inches in diameter, or 85 cubic inches. It ought to contain 57,600 grains of kalama nella, a kind of rice.

EDEN, a Hebrew word signifying pleasure or delight, and which was made the name of several places remarkably fruitful in their soil. The first is that province which the prophet Amos seems to notice (i. 5), when he divides Syria into three parts, viz. Damascus, the plain of Aven, and the house of Eden, called Cœlo-Syria, or the hollow Syria, because the mountains of Libanus and Anti-Libanus enclose it on both sides, and make it to resemble a valley. A second place wherein several learned men have sought for the country of Eden of the Scriptures is Armenia, between the sources of the Tigris, the Euphrates, the Araxes, and the Phasis, which they suppose to be the four rivers specified by Moses (Genesis ii. 10, etc). A third place which some have fixed on as the country of

Eden, is Chaldæa, not far from the banks of the Euphrates, a country remarkable for its extreme fertility (Joel ii. 3). Chaldæan tradition located it and its sacred tree in the city of Eridhu, whose position corresponds with the modern town of Rata. Babylon has also been so named; also Ceylon, with its Adam's footmark, peak, and bridge. The Eden mentioned by Ezekiel (xxvii. 23) as a great commercial place, is supposed by some to be the modern Aden, but it presents no signs of ancient grandeur. Eden is also supposed to have been in High Asia, between the common sources of the Jihun and other grand rivers, where there was abundance of the Ficus Indica or burr-tree, sacred to the first lord, Adinath or Mahadeva. Milton (Paradise Lost, book ix.) uses this tree to describe when Adam and Eve

'Both together went
Into the thickest wood; there soon they chose
The fig tree; not that kind for fruit renowned,
But such as at this day, to Indians known,
In Malabar or Dekhan, spreads her arms,
Branching so broad and long, that in the ground
The bended twigs take root, and daughters grow
About the mother tree, a pillared shade
High overarched, and echoing walks between.
There oft the Indian herdsman, shunning heat,
Shelters in cool, and tends his pasturing herds.
. Those leaves
They gathered, broad as Amazonian large.'

—*Rajasthan*, i. 23; *Robinson's Travels*, ii. 337.

EDEN. Sir Astley Eden, a Bengal civil servant who rose to the high offices of Chief Commissioner of British Burma, Lieutenant-Governor of Bengal, and Member of the Council of the Secretary of State for India. When the ryots of several districts in 1860 revolted against the hereditary cultivation of indigo, because it had never repaid them, he was the first to point out that every tenant-proprietor in Bengal was the virtual owner of the soil, and ought to be allowed to sow it with rice, or, under contract, to cultivate indigo or any other crop; but that this supposed freedom of contract had been overridden for two or three generations by the influence and power of the planters, backed by the wealth of mercantile houses. It remained for the Indigo Commission, for Sir J. P. Grant, the Lieut.-Governor, and for Sir Charles Wood, then Secretary of State, to refuse assent to all projects for compelling ryots to sow indigo under any law making a breach of contract a criminal offence, and to cancel a temporary enactment passed with this object. As Lieut.-Governor, the education in Bengal, the jails, the roads and railroads, the finances, all received his care. He displayed some of the best characteristics of a paternal administrator, while slowly and surely educating the people to do something for themselves.

EDENTATA, an order of mammals, so named because some have no teeth, and others none in the front of the jaws. They are divided into two groups, the Tardigrada or sloths, peculiar to America, and the Effodienta or burrowers, comprising the armadilloes of S. America, Cape, and New and Old World ant-eaters. Of these, the pangolins, of the family Manididæ, of the genus Manis, occur in British India, China, Burma, Malay Peninsula, and Java. See Manis.

EDESA, now called Orfa, was the Ur of the Chaldees whence Abraham removed to Haran. It is a city on the Euphrates, where Christian, Jewish, and Buddhist tenets were discussed. Here Ephraem Syrus taught, and Syriac translations were made of the Greek and Christian works, which have preserved to us the original.—*Max Müller*. See Orfa; Sarug; Semitic Races.

EDGEWORTHIA BUXIFOLIA. *Falc.* Yields an edible fruit in Kābul, unknown in England. It is the Reptonia buxifolia, *A. de C.* E. chrysantha grows in great abundance in China. E. Gardneri, *Meisson*, is a beautiful shrub with globes of waxy, cowslip-coloured, deliciously-scented flowers. This plant is allied to daphne, from the bark of which the Nepal paper is manufactured, and is similarly utilised. E. papyrifera, Mitsa, JAP.; its bark is made into one of the papers of Japan.—*Hooker, Him. Journ.* i. 205; *Sir J. E. Reed*, p. 43.

EDIBLE BIRD NESTS are made by the Collocalia brevirostris, *M'Clelland;* C. nidifica, *Gray.* The nests are found in the caverns of the limestone cliffs in the Peninsulas of India, and are well known in the commerce of the Archipelago. In Java they are sold at from £500 to £583 per pikul of 133⅓ lbs. avoird. See Birds' Nests.

EDIBLE SEA-WEED, Plocaria candida.

Kyouk puen, . . BURM. | Agar-agar, . . MALAY.

A sea-weed abundant on the Tenasserim coast, and valuable for its nutritious and medicinal properties. It was brought to notice by Dr. O'Shaughnessy as the edible moss of the Eastern Archipelago, and referred by him to the genus Fucus. The fructifications, however, being in small tubercles, the Rev. Mr. Mason considered it as a species of Agardhs genus, Sphœrococcus, which now constitutes a member of the genus Plocaria. It is an allied genus with the Ceylon moss (Gigartina lichenoides), first described as Fucus amylaceus by Dr. O'Shaughnessy, the Plocaria lichenoides of Mr. Mason; also with a species found on the coast of Devonshire in England, Pl. compressa, with the Corsican moss of the Mediterranean, P. helminthochorton, also with the Agar-agar, Pl. tenax, but differs from the Irish moss or Chondrus crispus. It is not of the same natural family as the Iceland moss, which is a lichen, the Cetraria islandica. The Tenasserim moss is said to be superior to all others, as it is wholly free from the bitter principle which renders other fuci so objectionable. 100 parts contain—sulphate and muriate of soda, 6·5; sulphate and phosphate of lime, 1·0; iron, a trace, 1·4?; vegetable jelly, 54·5; true starch, 15·0; wax, a trace, 0·5?; ligneous fibre, 18·0.

For use, steep it for a few hours in cold rain-water, next dry by the sun's rays, and grind to a fine powder; boil for 25 or 30 minutes; while hot, pass through muslin or calico, strain and boil down till a drop placed on a cold surface gelatinizes sufficiently. With milk and sugar, and flavour with lemon-juice or sherry.

EDICTS. Asoka, the first great Buddhist regal convert, carved many edicts on the rocks at Cuttack, in Gujerat, and on the banks of the Upper Indus, besides engraving them on pillars all over the country. From these we learn that Asoka's first care after his conversion was to send missionaries to proclaim his new faith in the neighbouring lands. It does not seem, however, that they penetrated beyond Kābul or Balkh westward. The most interesting record is that contained in the thirteenth edict of the rock-cut inscriptions, where he mentions having formed

treaties or alliances with Ptolemy, Antiochus, Antigonus, Magas, and Alexander,—not treaties of war or peace, but for the protection or aid of his co-religionists in the dominions of those kings. Owing to the imperfections of the stone and of the record, it is not easy to make out what is exactly intended; but this much is certain, that about the year 258 B.C. Asoka did make arrangements for religious purposes with Ptolemy Philadelphus, Antiochus Theos, Antigonus Gonatus, with Magas of Cyrene, and Alexander, who could only be the king of Epirus and Macedonia, mentioned by Justin in the same passage in which he relates the death of Magas.

EDOM. The patriarch of the Edomites was Esau, and they dwelt on the Dead Sea, from which they were driven by an earthquake. They were a warlike, unsettled race of Arabs, whose property was in their cattle, their waggons, and what their waggons could carry. They did not cultivate the soil, nor had they any respect for a landmark. The Nabatæans were at an earlier time the tribe called Edomites. But they lost that name when they carried it to the southern portion of Judea, when called Idumæa; for when the Jews regained Idumæa, they called these Edomites of the desert Nebaoth or Nabatæans. The Nabatæans professed neutrality between Antigonus and Ptolemy, the two contending powers; but the mild temper of Ptolemy had so far gained their friendship, that the haughty Antigonus, though he did not refuse their pledges of peace, secretly made up his mind to conquer them. Petra, the city of the Nabatæans, is in a narrow valley between steep overhanging rocks. Not more than two horsemen can ride abreast through the chasm in the rock by which it is entered from the east, while the other entrance from the west is down a hill-side too steep for a loaded camel. Their temples and huts were cut out of the live rock, and hence the city was by the Jews named Selah, the rock, and by the Greeks named Petra, from which last the country was sometimes called Arabia Petræa. The existence of rock-cut viharas or monasteries at Petra, in the dominions of Antiochus, and of similar excavations at Cyrene, go far to confirm and elucidate this; for, though travellers have hitherto called every excavation a tomb, there can be no doubt that many of those at Petra and Cyrene and elsewhere were the abodes of living ascetics, and not burial-places.—*Bunsen's Egypt*, pp. iii. 314-431; *Sharpe's Egypt*, i. pp. 250-51.

EDRISI, a Nubian geographer who visited the court of Sid Rai Jye Singh, the ruler of Anhalwara Puttun, A.D. 1094 to 1145. Edrisi states that Jye Singh was then a Buddhist. Edrisi lived A.D. 1099–1186. He mentions porcelain, and the fine cotton fabrics of Coromandel, the pepper and cardamoms of Malabar, the camphor of Sumatra, nutmegs, the lemons of Mansura (near the old course of the Indus, N.E. of Hyderabad), on the Mekran (Indus), the asafœtida of Afghanistan, and cubebs, as an import of Aden. He names the Konkans as the country of Saj, *i.e.* of the sag or teak tree. Marsden says that Edrisi is improperly called the Nubian geographer, that he dedicated his work to Roger, king of Sicily, in the middle of the 12th century, and that he describes the island of Al-Rami; but the particulars so nearly correspond with those given by the Arabian traveller, as to show that the one account was borrowed from the other.—*Marsden's Sumatra*, p. 4.

EDUCATION.

Erziehung, . . . GER.	Educacion, ... SP.
Educazione, . . . IT.	Terbiyat, ... TURK.

Education in the village schools of India is usually conducted in the verandah of a house, or in the open air. Schools for children are frequently held under trees in Bengal, and children who are beginning to learn, write the letters of the alphabet in the dust. This is the old oriental custom, and is alluded to in John viii. 6, when Jesus stooped down, and with his finger wrote on the ground. A general mode in India of teaching writing, is to write with a pencil of soapstone on a wooden board, or on thick pasteboard stained black. The writing board in Sind, called a furahi, is a thin board made of hard fine-grained wood, stained red, black, green, or yellow. The ink contains no mineral substance, and is therefore easily washed off, the board being smeared with a thin layer of clay and water. When the pupil has become somewhat skilful in the management of his pen, he lays aside the board, and uses a papier-maché material called daftari. It is made of several sheets of writing paper pasted together, smeared with a composition of verdigris, and glossed with a mohro, which is a polishing instrument made of steel, so that it may be washed when dirty (Burton's Scinde, p. 396). In the Peninsula of India, the ground, the writing-board, and the pasteboard are written upon, in the schools, but the ordinary material is the olay or dried palm-leaf, which is written on with an iron style. The education of the Brahmans of India in the vernacular of their district, has usually been conducted along with a knowledge of Sanskrit. Since the middle of the 19th century, many of them have acquired a knowledge of English. The lower caste Hindus have restricted their acquirements to the vernacular languages of their district. Numbers of them know English; very few know Sanskrit. The Mahomedans throughout India learn Arabic, Persian, and a small number know English. The Lubbai Mahomedan has the Koran in the Tamil tongue. Some of the Tamil women have been learned, one was an authoress, and many of their girls are now being sent to school. On the 29th July 1859, the Bethune School for Native Girls was founded at Calcutta. The English East India Company resolved to introduce a national system of education in a despatch from the Board of Control 19th July, No. 49 of 1854. The most important feature in the despatch was the measure of grants-in-aid. It offered to all schools, already existing, or that might hereafter be established, provided they were found efficient, pecuniary aid to an amount in each case not exceeding the sums arising from local sources, subject to conditions that in no way interfered with the perfectly free action of the managers of such schools, and only requiring that they should be submitted to Government inspection, with a view to ensure the secular instruction therein furnished being of a satisfactory character. It in fact threw open the field of Indian education to any one who chose to cultivate it, offering on the part of the Government to bear half the expense. The missionaries, with few exceptions, received the proffered aid, submitting without a dissentient voice to the conditions imposed.

Up to that year, 1854, during the rule in India of the English East India Company, only small and local efforts had been made by the state to educate the people, and even these had languished. The college of Fort William, established during the Marquis Wellesley's administration, was again abolished in 1853. But in 1881, Calcutta, Madras, and Bombay cities each had a university, with professors, and granting degrees in arts, medicine, law, and civil engineering. In the ten years 1872 to 1881, there had been 56,847 candidates for matriculation, of whom 21,182 had passed.

In 1881 there were 79,953 institutions for youths, and 2590 for girls, with 2,195,614 scholars, of whom 120,365 were females. At the B.A. examination at Calcutta University in 1883, for the first time in the history of that body, two young Bengali ladies appeared as candidates, and were declared to have passed. The two girl graduates are named Chandramukhi Bose and Kadambini Bose. They were educated at the Bethune School in this city. The receipts in 1881 were Rs. 1,65,91,016, and expenditure Rs. 1,75,95,323. In 1882, during the Earl of Ripon's administration, Dr. W. W. Hunter was placed at the head of a commission to investigate the position of the Indian Government towards the people, in connection with the questions of high education and primary education.

During Hindu and Mahomedan supremacy, except in a few rare places, the education of their subjects was left to the benevolent efforts of learned men, who taught gratuitously such pupils as sought instruction; and this practice is continued to the present time. Since the arrival from Europe of Portuguese, Dutch, Danes, Italians, French, and British, their Christian missionaries of all sects have striven to spread education amongst the people, and there are Christian schools and colleges in which the English language is the medium of instruction, which compete successfully with the institutions established by the Indian Government.

Education in China is very general, and is largely encouraged by the state, but few women are educated. Children at six years of age are sent to school. The successful competitors for the literary degrees of M.A., B.A., and others are congratulated. Papers bearing Chinese characters are greatly venerated. See Han-lin.

EDWARDES, Sir HERBERT, K.C.B., K.C.S.I., born January 1820, died 1868, an officer of the Bengal army. He served under Sir Hugh Gough at Sobraon and Moodkee; served under Sir Henry Lawrence in the Panjab in 1848 and 1849. He subjugated the valley of Bunnu in 1848; and in May 1848 he defeated Mulraj, aided in the settlement of Kashmir and establishing the authority of Gulab Singh, and aided in the rescue of the British prisoners at Multan. In the revolt and rebellion of 1857–58–59, he served in the Panjab along with Sir John (Lord) Lawrence, Generals Nicholson, Cotton, and Chamberlain. His views extended to ruling India as a Christian country, and his purse and pen were ever ready to aid in extending Christianity. The Indian Council decreed a monument to his memory.

EDWARDSIA HYDASPICA, E. maderaspatana, and E. mollis are shrubs of the natural order Fabaceæ. It is doubtful whether these be different species. The flowers of E. mollis are pretty, and is supposed to be the second kind of arghawan (see Bauhinia variegata) mentioned by Baber (or his translator) as growing at Baber's tomb at Kābul. It grows in the Panjab and on the Suliman range, up to 8000 feet. Run, Rohen, and Malan are the Pushtu names for E. hydaspica.—*Dr. J. L. Stewart.*

EDYE, JOHN, wrote on the Native Vessels of India, Ceylon, Malabar, and Coromandel coasts, Lond.; also on the Timber Trees of Ceylon and Malabar, As. Trans. i. 1–15; and a Description of Seaports on the Malabar Coast, ibid. ii. 324. By a residence of five years in India, as His Majesty's master shipwright in Ceylon, he had singular opportunities of becoming perfectly informed on the subjects of which he treats in his memoirs. He describes in a clear and concise manner the various vessels of the coasts of Coromandel and Ceylon. He was afterwards employed in the department of the surveyor of the navy. —*J. R. As. Soc.*, No. i. of 1834, pp. 1 to 14.

EED. Arab. There are five eed or religious festivals held annually by Mahomedans. The two principal are the Ramzan or Eed-ul-Fitr, and the Bakr-eed, which are farz and sunnud, *i.e.* commanded both by God and Mahomed to be observed. The other three are, Maharram, Akhri-char-shambāh, and Shab-i-Burāt, and are only sunnud, or commanded by Mahomed. The Eed-ul-Fitr, or Ramzan-ki-Eed, is held on the first day of the tenth month, Shawal, on which Mahomedans put on new clothes, make congratulatory visits, and make charitable offerings, fitr or sadka. All of them move in procession to the Eedgah, where the khutbah is read. The Eed-ul-Fitr means the festival of breaking the fast, and follows the Lent of the Ramzan. The Bakr-eed is also called Eed-i-az'ha or Eed-ul-Kurban, the festival of sacrifices, and is held on the tenth day of the month Zil-haj.

EEDEE are holiday presents, given in Mahomedan schools at the several festivals by masters, who receive a small gift from each scholar in return, at the festivals of the Kurban, Shab-i-Burat, and Ramzan. They are sometimes a verse relating to the eed (or feast), written on coloured or illuminated paper. The custom is followed in Hindu schools at the festivals of the Holi, Basant panchami, Dewali, and others.

EEDGAH, a place of festival or of prayer; a building raised by Mahomedans of India, generally without the walls of a town, often amidst gardens. It is erected on a platform or a pediment three or four feet above the level of the ground, and on an eminence, consisting of a straight wall with two or more minarets, and having in the centre, on a level with the ground, three steps, which forms the mimbur (or pulpit), from which the khutbah (or sermon) is read on particular occasions, or on particular feast days, such as those of Bakr-eed and Ramzan-ki-Eed, which occupies from an hour and a half to two hours. It is said that Mahomed, in addressing the congregation, stood on the uppermost step; Abu Bakr, his successor, on the second; Omar, on the third or lowest; but Osman, observing that at this rate we might descend to the bowels of the earth, fixed upon the middle as the one from which to deliver the sermon; since then it has continued so. This building is merely intended as a signal post for people to assemble at, to hear the khutbah read. A bamboo or any other post might answer the same purpose,

but a brick building is usually preferred, as being more durable, and affording individuals an opportunity of handing down their names to posterity, by being at the expense of erecting them. It is by no means a sacred edifice.—*Herkl.*

EEITA-AKU. TEL. The leaf of Elate sylvestris; Eeita khallu, the toddy; Eeita pandu, the fruit.

EEK, also Eekh. HIND. Saccharum violaceum. Sugar-cane, a sugar-cane field. Eek'hraj, also Ook'hraj, is the day on which sugar-cane is planted, and which, in Northern India, is performed with some rural ceremonies.—*Elliot.*

EELE-GYWOT-SHA, a bast of Arakan; strips five to six feet in length, composed of several layers, of which one side is smooth and compact, and the layers on the other side thin but cancellar; all having a considerable degree of toughness.

EESA or Isa. ARAB. Jesus. Eesa-ul-Masiha, Jesus the Christ. Hazrat-Eesa, the Lord Jesus.

EESA-KHAIL, an Afghan clan whose country extends to within 30 miles of the province of Dehra Ismail Khan. It is a strong and mountainous strip of land. The mountains of the Eesa khail and Khussur rise so abruptly from the Indus, that but for the access to this country on other sides, it might make successful resistance.—*East India Papers, Cabool and Afghanistan*, 1859, p. 22.

EESAWIYAH or Isawiyah, a sect of Mahomedans in N. Africa, who take their name as disciples of Sidi Mahomed-ibn-Isa, a Maghrabi. They are known to Europeans as the dancing darveshes, of whom there are a number in Cairo, almost all of them Maghrabi Arabs of Northern Africa. Mahomed-ibn-Isa was a native of Moqinay in Morocco. His followers at Kairwan are guilty of fanatical self-torturing. A writer in the Times of 18th November 1881, describes a circle of musicians in the centre of a room, playing a slow monotonous tune on earthenware drums and tambourines, gradually increasing in cadence until most of the devotees commenced to bow their heads and shout a refrain, swaying to and fro in time to the music. Suddenly one after another threw off their clothes and shouted discordantly. A Tunisian soldier slashed his stomach with a sword; a second forced a long iron prong against his side, which another drove in with a mallet; and others pierced their cheeks with iron skewers and their shoulders with daggers. One crunched glass; a sheep was killed, and torn and eaten raw and bleeding.

EESHWA. SANSK. From Eesh, to be grand, hence Eeshwara, the glorious; Eeshwari, feminine of Eeshwara.

EGERTON, MR., a Bengal civil servant, who wrote an account of his journey through Spiti, London 1864. In 1877 he was appointed to be Lieut.-Governor of the Panjab, was created in 1875 a C.S.I., and in 1878 a C.I.E.

EGGS.

Baiza, Baida, . . . ARAB.	Uovo, ... IT.
Matte, Tetti, Gadda, CAN.	Ovum, ... LAT.
Ki-lwan, ... CHIN.	Huevo, ... SP.
Ki-taze, Ki-tan, . ,,	Matta, ... TAM.
Œufs, ... FR.	Gadda, ... TEL.
Betzim, ... HEB.	Zimurta, ... TURK.
Unda, ... HIND.	

Eggs as food articles are in varied estimation in the East Indies. Hindus have a religious objection to eggs. Their sacred books class both fowls and eggs in the category of unclean things, and no strict Hindu will touch anything so unholy, on any possible pretext. With Mahomedans they are largely eaten, usually in the form of omelet. The Europeans in the East Indies adhere to the customs of their race. Eggs are used in worship by the women of the Kachari, and in divinations by the Khassya race. Fowls' eggs are largely consumed by the Chinese couriers or postmen, who take them nearly raw; in China they are seldom boiled and eaten as in Europe.

Hatching of fowls' eggs and eggs of fishes is largely practised by several nations. Ducks' eggs are artificially hatched in China in large quantities, particularly in Chusan at Fa tee, and P'oee-tai-shuee and Nam-tong near Canton.

In Chusan, every spring, thousands of ducks' eggs are hatched by artificial heat. The establishment is situated in the valley on the north side of the city of Ting-hae. The hatching house is a kind of long shed, with mud walls, and thickly thatched with straw. Along the ends and down one side of the building are a number of round straw baskets, well plastered with mud, to prevent them from taking fire. In the bottom of each basket there is a tile placed, or rather the tile forms the bottom of the basket; upon this the fire acts,—a small fireplace being below each basket. Upon the top of the basket there is a straw cover, which fits closely, and which is kept shut whilst the process is going on. In the centre of the shed are a number of large shelves placed one above another, upon which the eggs are laid at a certain stage of the process. When the eggs are brought, they are put into the baskets, the fire is lighted below them, and a uniform heat kept up, ranging from 95° to 102°; but they regulate the heat by their own feelings, and it will therefore vary considerably. In four or five days after the eggs have been subject to this temperature, they are taken carefully out, one by one, to a door, in which a number of holes have been bored, nearly the size of the eggs; they are then held against these holes, and the Chinamen look through them, and are able to tell whether they are good or not. If good, they are taken back, and replaced in their former quarters; if bad, they are of course excluded. In nine or ten days after this, that is, about fourteen days from the commencement, the eggs are taken from the baskets, and spread out on the shelves. Here no fire heat is applied, but they are covered over with cotton and a kind of blanket, under which they remain about fourteen days more, when the young ducks burst their shells, and the shed teems with life. These shelves are large, and capable of holding many thousands of eggs; and when the hatching takes place, the sight is not a little curious. The natives who rear the young ducks in the surrounding country know exactly the day when they will be ready for removal, and in two days after the shell is burst the whole of the little creatures are sold, and conveyed to their new quarters.

In the East, during the hot summer months, some of the pond fish aestivate in the mud, where they await the advent of the succeeding year's rains. As soon as the monsoon bursts, the ground becomes saturated, and fish are perceived dispersing in all directions. In a very few days fry are also discovered in every little piece of water, while the time which elapses between the commencement of the rains and the appearance of the little fish does

not seem to be sufficient if they have to be deposited by the mother, fertilized by the father, and hatched out in the usual course. It seems probable that the eggs may have been in the mud, which retarded their hatching in the same manner as ice acts.

Salt is obtained by the Government of India from the Sambhur salt lake in Rajputana, which overflows during the rains, and when the waters subside, a deep incrustation of salt is deposited on its shores for several miles around. In the water of the lake is a peculiar form of crustacea, said to be Artemia salina. These are about half an inch in length, are provided with numerous feet, while between the body and tail there exists a small sac full of eggs. These vary in colour from a pale fawn to a brilliant crimson; and as the brine approaches saturation they die off, but before dying they deposit their eggs, which are carried by the water to the edge of the lake, where immense layers, upwards of an inch in thickness, are found. These layers of eggs are subjected to the intense heat of the hot season, and are hatched at the commencement of the annual rains.—*F. Day.*

EGG-SHELL CHINA, a manufacture in Japan, in the provinces of Fozen and Setsuma.

EGRET, the common name of several species of the Cultirostres tribe and family Ardeidæ of birds,—Herodias alba, H. egrettoides, H. garzetta, Demi-egretta asha, Buphus coromandus, and others. In Australia, what, in India, are called white paddy-birds, and in Britain are the much-prized egrets, have come to be denominated cranes; and the real crane of that country is known as the native companion. See Birds.

EGYPT, in the highway from Europe to the East, is ruled by the Khedive, a hereditary viceroy under the emperor of Turkey. The Egyptian dominions are equal in extent to Russia in Europe; its population, 5½ millions. But Egypt proper, the Balad-ul-Misr (the Misraim of the Bible), though 550 miles in length, is, as distinguished from the surrounding deserts, the narrowest country in the world. The area of its cultivable tract, which has remained unaltered since the remotest antiquity, is about 11,342 square miles, the Delta measuring about 6350 square miles; and the Egyptian valley of the Nile and the Tagum, 4992 square miles. The Nubian portion of the valley of the Nile, 930 miles in length, does not exceed 1050 square miles of cultivable area. Lower and Upper Egypt are arranged into seven provinces (Mudiriyeh), the Fayum forming a division by itself. The seaports on the Red Sea are under a Governor-General. Khartum and the Soudan have sometimes had one or two separate Governors-General, and Gordon Pasha for a few years ruled in the Soudan. The total amount of land under cultivation, roughly speaking, is 5,000,000 feddans, the feddan being equal to three-quarters of an acre. Of these, 1,000,000, or one-fifth, belong to the Khedive; one-tenth, or 500,000 feddans, are held by other large landed proprietors; while the remaining seven-tenths are in the hands of the fellaheen,—these latter being subjected to taxation varying in amount from thirty to seventy shillings per feddan. Egypt has been much resorted to by Asiatics and Europeans from the most ancient times, but it is only since the middle of the 19th century that its more ancient history has been traced. The skulls of the mummies prove that Egypt has been peopled with a variety of tribes; and physiologists have divided them into three classes,—*first*, the Egyptian proper, whose skull is shaped like the heads of the ancient Theban statues and the modern Nubians; *second*, a race of men more like the Europeans, and these mummies become more common as we approach the Delta; *third*, is an Arab race, and is like the heads of the labourers in the pictures.

Egyptian chronology now runs back to B.C. 5004 according to Mariette, and to B.C. 3892 according to Lepsius; and the earliest monuments which belong to the close of the third dynasty are therefore more than 6000 years old by one calculation, and more than 5000 by the other. The ancient Egyptians excelled in making glass, linen, and in dyeing, and they had a knowledge of metallurgy. In the 19th century A.D., Count de Lesseps successfully completed a canal from the Red Sea to the Mediterranean.

Three times during the 19th century the British have invaded Egypt, but since Cambyses, son of Cyrus, king of the Medes, led his hordes of Persians and Phœnicians against the last of the Pharaohs, and reduced him to the position of a Persian satrap, Egypt has been subject to alien races. The first invasion of which we have exact details, and the most successful with the least materials, was that of Amru, general of the Khalif Omar, 639 A.D., which won Egypt from the Greek empire for the Mahomedans. Amru entered Egypt from Syria in the month of December with 4000 men. The reduction of Pelusium fortress, close to the present Port Said, took him a month. He then marched straight upon Memphis, but was kept for seven months before Babylon, near the modern Cairo, notwithstanding that the nation rose in his favour, detesting its Greek rulers. But when, at length, in August, partly through treachery, Babylon surrendered, the country was practically won. The Greeks, though defeated in a pitched battle, after twenty days' fighting, made good their retreat to Alexandria. Alexandria held out for fourteen months, and only in December 641 the garrison finally abandoned Egypt to the Mahomedans. Many efforts for its recovery were made by Christians, the most strenuous and most disastrous being that under Louis IX. in 1250. He arrived at Damietta on 5th June with 700 knights, out of 2000 with whom he had started from Cyprus, representing probably a force of some 7000 men. The next day he defeated the Saracens, and took possession of the town. Here he wasted his time till the 6th of December, when he advanced to Mansurah, where he stayed two months more. On the 6th of February he attacked the enemy, now strongly reinforced, was hopelessly defeated, and taken prisoner with his whole army, being only ransomed by the surrender of Alexandria, and the total evacuation of Egypt.

Napoleon Bonaparte reached Alexandria with some 30,000 men on the 1st of July 1798. Next day he was in possession of the town. On the 13th he fought a bloody battle at Ramanieh with the Mameluks. On the 21st he became master of the country by the total defeat of Murad Bey, with 6000 horsemen and 20,000 foot, in the battle of the Pyramids. On the 23d he entered Cairo.

When Nelson arrived on 1st August at Alexandria, notwithstanding his total destruction of the French fleet in Aboukir Bay, he could not shake the position of Napoleon, now firmly planted in possession of the country. A year afterwards, notwithstanding his loss at Acre, on the 11th of July, Napoleon totally defeated the Turks at Aboukir. Repeated British bombardments of Alexandria had no effect, and on the 2d of March 1801, Abercromby, with 17,000 men, cast anchor in Aboukir Bay. On the 8th he effected a landing, and on the 21st he won the battle of Alexandria against 27,000 French, and lost his own life. Rosetta was taken, but the British troops hesitated to advance for two months. At length, in May, when some paltry reinforcements had arrived, they moved onwards, and again defeated the enemy, and took Ramanieh on the 7th, and Cairo capitulated on the 20th.

Meanwhile General Baird had started from Bombay in the end of December 1800, but only arrived at Kossir, on the coast of Upper Egypt, on the 8th of June. In nine days, with a force of 6400 British and native troops, he traversed 140 miles of desert to the Nile, and reached Cairo on 10th August with hardly any loss. The united force then marched down on Alexandria, and on 31st August Menou capitulated, and the whole French army evacuated Egypt.

The next British expedition to Egypt was in 1807. The Turks had declared war, and in March a force of 5000 men was despatched under General Fraser to Egypt. They arrived off Alexandria on the 15th, landed on the 18th, and took it on the 21st. On the 22d a fruitless attempt with a small force was made on Rosetta. Next month, General Stewart besieged Rosetta for thirteen days, and on 22d April he fought his way back to Alexandria, with a loss of 1000 out of 2500. On 22d September Alexandria was surrendered to the Turks, and Egypt evacuated. As on this occasion the Mameluks and the country were in our favour, the failure can only be attributed to the want of vigour in the attack.

In 1882 the British for the third time invaded Egypt. Their army disembarked at Alexandria, and occupied the line of the Suez Canal, and a contingent of British and Native Indian soldiers from the armies of India embarked at Bombay for Suez, and Ismailia and Alexandria were the headquarters. The Egyptian army was checked by General Wolseley at Kassassin; utterly defeated, on the 13th September 1882, at Tel-ul-Kabir; Cairo was occupied by the British and Indian troops on the 14th, and Egypt won. The army and leading civilians had combined against the Khedive, because all posts of value were being given to foreigners. The numbers were—Germans, 41, with salaries amounting (monthly) to £E1248; Americans, 8, £E508; Englishmen, 174, £E6768; other British subjects, 94, £E1208; Austrians, 101, £E2369; Belgians, 12, £E352; Dane, 1, £E96; Spaniards, 12, £E252; French, 326, £E9812; Greeks, 115, £E1469; Dutch, 9, £E340; Italians, 348, £E6011; Norwegians, 2, £E106; Roumanians, 3, £E34; Russians, 5, £E341; Swede, 1, £E96; Swiss, 14, £E210; European policemen, 59, £E368;—total, 1325 persons, with monthly salaries amounting in the aggregate to £E31,588. This list comprises both the administrations which exist in virtue of special conventions, such as the Public Debt Department, Domains, Daira, Sanieh, and international courts, and also the State Administrations properly so called. The latter employ 970 foreigners. Altogether, 3,114,241 piastres per month, equal to £373,704 a year, were spent in salaries to foreign officials, or £264,000 a year, if the Domains, Dairas, and international courts are excluded.

The population of Egypt proper is 5,250,000, or about 463 to the square mile. The total population under the sway of the Khedive is between 16 and 17 millions.

Fellaheen (peasants) form the bulk of the population of Egypt proper. They are Mahomedans.

Copts amount to about 300,000. They are mostly dwellers in towns. They profess Christianity.

Turks in Egypt form an aristocracy. They number barely 100,000 souls, and are supposed to be diminishing.

In 1881–2, Egypt sent to India merchandise to the value of Rs. 4,81,964, and took Rs. 1,68,42,831 of Indian produce. The E. coast of Africa sent to the value of Rs. 30,51,623, and received Rs. 23,54,896 of Indian produce, and Rs. 22,95,396 of re-exported foreign goods.

EGYPTIAN BEAN, a name sometimes given to the bean fruits of Nelumbium speciosum, *Willd.*, from the notion that they were the beans which the disciples of Pythagoras were forbidden to eat.

EHRAM or Ihram, ARAB., meaning any sacred or holy thing or place. It is applied in Egypt to the peculiar dress worn by pilgrims during the performance of the required ceremonies in Mecca, and until the completion of the pilgrimage. It consists of two pieces of cotton or linen or woollen cloth without seam or ornament, one of which is wrapped round the loins, and the other thrown over the shoulders. The instep and heel of each foot and the head must be bare; but umbrellas are now used by many of the pilgrims.

EHRETIA, a genus of shrubs of the natural order Boraginaceæ. E. aspera and E. buxifolia, small trees of the south of India; E. internodia, a tree of the Mauritius; E. lævis and E. serrata, trees all over India; E. arenaria, *Griff.*, is one of the sand-binding plants of the Indian coasts; E. Wallichiana, *H. f. et Th.*, grows in the Darjiling hills. The root of E. buxifolia (Kuruvingi vayr, TAM., Pale ke jar, HIND.) is given in decoction as an alterative in syphilitic cachexia, and its fruit is eaten. Wight gives Ehretia aspera, cuneata, lævis, ovalifolia, umbellata, viminea, Wightiana.

EHRETIA ARENARIA, *Griffith*, found between 12° and 28° N. lat.; binds together loose sand in a minor degree. It may be the same as Ehretia X) cuneata? *Wight, Icon.* iv. t. 1385, which grows on sandbanks in the beds of all our rivers. —*Cleghorn.* See Sand-binding Plants.

EHRETIA ASPERA. *Roxb.* A small tree of the Panjab plains, Siwalik Hills, and Salt Range. In times of dearth, its bark is said to be ground, mixed with flour, and eaten. Its wood is valued for its hardness.—*J. L. Stewart.*

EHRETIA BUXIFOLIA. *R.* Cordia retusa, *Vahl.*

Heen-tambala, . SINGH.	Pitta-pisinika, . . TEL.
Kuru-vingi, . . . TAM.	Tella-juvi, . . . ,,
Visser-pallam maram, ,,	Bapana-buvi? . . ,,

A shrub of the Peninsula of India, and abundant in the hot, drier parts of Ceylon. Fruit eaten by the poor; some part of the plant taken internally in a cachectic state of the body.—*Thw.*

EHRETIA LÆVIS. *R.* Beurreria lævis, *G.Don.*

Peda pulimera, Pal-dantam, CIRCARS. GOD., TEL. | Seregada, ... TEL.

A pretty large tree, common in the drier parts of Ceylon, and in the Peninsula of India; is a native of the Circar mountains; grows in Hindustan, in the Dehra Doon, Kamaon, Kheeree pass, and in Bengal. It furnishes a hard, valuable small wood, which in the Circars is used by the hill people for many purposes; might be used in turnery.—*Ainslie; Thw.; Cleghorn; Beddome.*

EHRETIA OVALIFOLIA. *W. I.*

Gundun, . . . MAHR. | Naraga maram, . . TAM.

In the Coimbatore district, a common but generally small tree, and found about towns on the Bombay side, never in forests. The wood is said to be of no account.—*Wight; Gibson.*

EHRETIA SERRATA. *Roxb.*

E. pyrifolia, *D. Don.* Kala aja, ... BENG. | Nulshima, . . . NEP. Punra, . . . PUSHTU.

A small tree growing in Bengal, Chittagong, the Khassya mountains, Nepal, Bhutan, Kamaon, and the Dehra Doon. It furnishes a tough, light wood, easily worked and durable, made into sword handles.—*Roxb.*

EILAK. TURK. The term given by the pastoral Daurani to their summer residence,—Kishlak, also Turki, being that of their winter station.

EIMLEE, a subdivision of the Tuga tribe dwelling in Husunpur, Dhubari, Dhaka, and Oojhari, in the zillah of Muradabad; many of these are Mahomedans.—*Elliot.*

EIN-SHE-MEN. BURM. Lord of the Eastern House; the distinctive appellation of the declared heir to the Burmese throne.

EIN WIN. BURM. A tree of Moulmein, used for all ordinary purposes of building.—*Cal. Cat.*

E-JIN or Ee-gin of Malacca, a grain from, seemingly, one of the Leguminosæ. In 100 parts, —moisture, 12·60; nitrogenous matter, 23·06; starchy matter, 59·40; fatty or oily matter, 0·89; mineral constituents (ash), 4·05.

EJOO or Eju, also Gomuti, a strong black horsehair-looking fibre obtained from the Arenga saccharifera tree. This fibre is much esteemed for making rope, especially cables, for which purpose it is peculiarly adapted, from not being liable to injury if stowed away below when wet with salt water.

EK. HIND., PERS. One. It enters into many compound words, as Eka, SANSK., chief. Ek-atasha, also Ek-bara, in distillation, the spirit once passed over. When re-distilled it is called Do-atasha or Do-bara, double-distilled; Sih-atasha, or thrice distilled.

Ekach'hatra, also Ch'hatrapati, a vaulted horizontal umbrella, always reserved exclusively for royalty. It is the source of the word Satrap.

Ek-fardi, also Ek-fasli, land yielding one crop annually.

Ekhartha, a one-wheel well. A domala or dohartha well has two wheels.

Ekha or Yakha, a slight carriage drawn by one horse.

Eksuti, coarse, thin, single-thread cotton cloth.

Eka-chakra, the modern Arrah. The Pandavas dwelt in it for a short time during their exile.

Eka-danta or Eka-danahtra, from Eka, one, and Danta, a tooth, a name of the Hindu god Ganesh.

Eka-dashi, literally one and ten, the 11th day of the moon's increase or decrease. It is one of the Hindu fast days, or Bart.

Eka-dasi vrata, fasting on the 11th lunation.

EKALBIR. HIND. Datiscus cannabinus. Its root is a dyestuff; also Verbascum thapsus.

EKAMRA or Ekamra Kanana, a forest in Orissa (Utkala), which was the favourite resort of Siva, and became the great seat of his worship, at the city of Bhuvaneswara.—*Dowson.*

EKLINGA, a celebrated Saiva temple in the defiles of the Vindhya. The most antique temples are to be seen in such spots, within the dark gorge of the mountain, or on its rugged summit, in the depths of the forest, and at the sources of streams, where sites of seclusion, beauty, and sublimity alternately exalt the mind's devotion. In these regions the image of creative power appears to have been the earliest, and at one time the sole object of adoration, whose symbols, the serpent-wreathed phallus (lingam) and its companion the bull, were held sacred even by the children of the forest. In these silent retreats Mahadeva long continued to rule triumphant. The temple of Eklinga, situated in one of the narrow defiles leading to the capital, is an immense structure, though more sumptuous than elegant. It is built entirely of white marble, most elaborately carved and embellished. The brazen bull, placed under his own dome, facing the sanctuary of the phallus, is nearly of the natural size, in a recumbent posture. It is cast (hollow), of good shape, highly polished and without flaw, except where the hammer of the Mahomedan had opened a passage in the hollow flank in search of treasure. Amongst the many temples where the brazen calf forms part of the establishment of Bal-Cesar, there is one sacred to Nanda alone, at Naen, in the valley. This lordly bull has his shrine attended as devoutly as was that of Apis at Memphis, nor will Eklinga yield to his brother Serapis. The changes of position of the Apis at Naen are received as indications of the fruitfulness of the seasons, though it is not apparent how such are contrived. The physiological worship of the god Siva, with his emblem the lingam, priapus, or phallus, and his vahan, the bull Nandi or Basava, seems to have entered India on its western border. But it is now very general, and Nandi, in stone or in brass, is to be seen everywhere; perhaps half a million of them are in India, generally couching, looking to the lingam.

EKOJI, the first of the Mahratta rulers of Tanjore. He was the son of Shah-ji (A.D. 1644), a subahdar of the Karnatic under Aurangzeb, who gave Tanjore to Ekoji as a jaghir. The last of the Tanjore rulers died in 1855, and the country was annexed to British territory.

EKSHA MALL, a Nepal ruler, who in A.D. 1600 divided Patan, Khatmandu, Banepa, and Bhatgaon between his daughter and his three sons. His full name was Jaya Eksha Mall, also written Jye-Kush Mull.

EL, the Arab-Egyptian pronunciation of the article Al, answering to 'the.'

EL. HEB. The strong. Many Jewish names are compounded with this name of God, as Daniel, Ezekiel, Gamaliel, Uriel, Eliun, the highest. Several nations, in addition to the Hebrews, used this name, in one or other mode, as relating to the Supreme Being. El, also named Kronos of the Egyptians, according

to the doctrine of Byblus, was the son of heaven and earth. He conspired against his father Ouranos. El is the root of Elohim. Bethel of Genesis xxviii. 19 is a compound word,—Baith-El, the house of El, meaning God's house. El of the Greeks (Yl in Hebrew and Phœnician), *i.e.* God, the strong; whence comes Elohim, literally, the gods, and the Græco-Phœnician Bætylia, or sacred stones supposed to have fallen down from heaven, perhaps aërolites, which were honoured and held sacred on account of the divine power supposed to be inherent in them. Jacob, as he rose from his dream, exclaiming (ver. 17), 'How holy is this place: this is none other but the house of God (Baith-El). . . . And Jacob . . . took the stone that he had made his pillow, and set it up for a pillar, and poured oil upon the top of it, and called the name of the place Beth-el.'—*Bunsen*, iv. 242-3. See Bætylia; Bait.

ELÆAGNACEÆ, oleasters, a small natural order of plants, consisting of trees or shrubs whose leaves are either opposite or alternate. Several species of the genus Elæagnus occur in the south and east of Asia. Thunberg enumerates eight in Japan. E. parviflorus, *Royle*, valuable as a hedge plant, grows from the Himalaya to China. E. hortensis and E. orientalis bear a brown fruit about the size of an olive, which is brought to market in Persia under the name of Zinzeyed; in quality it is like a jujube. The red drupes of E. conferta, the large olive-shaped ones of E. arborea, and the pale orange-coloured ones of E. triflora, are eaten in India. The ripe berries of E. angustifolius are eaten in Kashmir, as also are those of E. dulcis, E. hortensis, and E. orientalis. E. Moorcroftii has ornamental flowers. The wood of E. conferta is the winter fuel of the people of Iskardo; and the honey gathered by bees from the sweet flowers of E. orientalis is much esteemed. E. latifolia, *Linn.*, is very common in Ceylon up to 5000 feet. It is very variable, and is the E. arborea, conferta, and parvifolia, *Roxburgh*, and the ferruginea, Kologa, Thwaitesii, and Wallichiana of Schlegel. —*Mueller; Stewart; Roxb.; Wight; Hooker; Thw.*

ELÆAGNUS ORIENTALIS.

Sanjit, Sanjad, . . PERS.	Sanzilleh, . . PUSHTU.
Zinzid, ... ,,	

Grows along the banks of watercourses in Afghanistan and Persia. The trees are remarkable for their silvery lepidote and aromatic foliage. The fruit is eaten fresh, or boiled with rice, like the apricot. It sells at Peshawur several seers for a rupee.—*MacGregor; Powell.*

ELÆIS GUINEENSIS is the oil-palm, or Maba of the natives of Congo. It is common all along the west coast of Africa, and might with advantage be introduced into India. The fruits afford the important product palm-oil, of which upwards of 1,000,000 cwts. were imported in 1871. The oil is obtained by bruising the fleshy part of the fruit (and not the kernel, as sometimes stated), and subjecting the bruised paste to boiling water in wooden mortars; an oil of an orange-yellow colour separates, which concretes when cool to the consistence of butter, and has when fresh the smell of violets or of the root of Florentine iris, with a very slightly sweetish taste. The oil is used by the Africans in cookery and for anointing the body. In Europe it is chiefly employed in perfumery and medicine. The Elæis occidentalis of Swartz, the thatch-tree of Brown's Jamaica, and the Avoira of Aublet, are probably all identical with the Maba or oil-palm, of the African coast.

ELÆOCARPACEÆ of Lindley, an order of plants comprising species of Elæocarpus, Ganitrus, and Monocera. Dr. Roxburgh describes E. aristatus, fruticosus, ganitrus, lanceæfolia, lucidus, robustus, rugosus, serratus, and tuberculatus; and E. cuneatus occurs in Malabar, Quilon, and Ceylon. In Japan are E. japonicus and photiniæfolius. E. amœnus, *Thw.*, a very beautiful tree, is common in the central provinces of Ceylon up to 4000 feet, and is also cultivated in gardens. E. ferrugineus, *Wight*, the Monocera ferruginea, *Wight, Icones*, tab. 225, is a good-sized tree, very common on the Neilgherries, Animallays, and Pulneys, at the higher elevations. The margins of the leaves are always connivent, rendering the leaves quite boat-shaped. The timber is used for building purposes. Wight figures the ovary as four-celled; but in several flowers that Colonel Beddome dissected it is three-celled. E. lanceæfolius, *Roxb.*, is a tree of the Darjiling Hills. E. venustus, *Bedd.*, a fine large tree, only observed in the Muti Kulivayal, South Travancore, at 4500 feet elevation; in flower in August. It is truly beautiful when covered with its snow-white large flowers, which it produces in great abundance. E. robustus grows on the Khassya Hills. E. longifolius, *Bl.*, is of Java and Burma. E. Indicus, *R.*, and E. lucidus, *R.*, are trees of Chittagong. E. montanus is a middle-sized tree of Ceylon. In Burma are several species, undetermined, which the Burmese name Tau-mangyee, Than-lwen, and Wa-hso-ben.

Elæocarpus ganitrus, *Roxb.*

Ganitrus sphæricus, *Gærtn.*

Utrasum bead tree, ENG.	Rudra-kai, . . . TAM.
Rudraksha, . . SANSK.	Rudra-challu, . . TEL.

A tree of Java. The seeds, about the size of marbles, are worn as necklaces by Brahmans and ascetics; they are commonly called Utrasum beads.

Elæocarpus hinau, the hinau of New Zealand, is a large timber tree. Its berry is edible, though taste harsh.

Elæocarpus lanceæfolius, *R.*

Ootradijke manke, DUKH. | Utrasum? TAM.

A tree of the Khassya Hills, Assam, Moulmein, and Java. The seeds are very rough, and about the size of small nutmegs. Saiva Brahmans and Pundarums, religious devotees of the Saiva sect of Hindus, who live by alms, wear strings of them round their heads and necks, and form them into rosaries. This small tree is covered over with a profusion of white flowers.—*Mason; Ain.; Roxb.*

Elæocarpus oblongus, *Gærtner*, Kassow, DUKH., is a handsome tree of the Dekhan; flowers in May, petals beautifully fringed; the foliage is frequently tinged with red, giving an autumnal appearance to the tree.

Elæocarpus obovatus, *Ainslie*, E. coriaceus, *Hook.* This tree grows at Newera Ellia and other elevated parts of the island of Ceylon, at an elevation of from 6000 to 8000 feet.—*Thw.*

Elæocarpus tuberculatus, *Roxb.*

Monocera tuberculata, *W. Ic.*	E. serrulatus, *Roxb.*
	E. bilocularis, *Roxb.*
Rudrakai, Badrachai, TAM.	Rudracha, Badracha, TEL.

This truly magnificent tree is very common in Coorg, the Animallays, Malabar, and Travancore, up to an elevation of about 4000 feet. Very large trees of it may be seen about the foot of the Neilgherries and Makurty Peak; and the seeds

are worn as ornaments, also as rosaries by Vaishnava Brahmans and by fakirs.—*Mr. Rohde, MSS.; Royle; Thw.; Riddell; Ward*, p. 371; *Beddome, Fl. Sylv.* part x. p. 113.

ELÆOCOCCA VERNICIA. *Ad. Juss.*

Vernicia montana, *Lour.* | Dryandra vernicia, *Corr.*

A tree of Assam, Cochin-China, and China. Its nuts furnish some of the wood-oil or varnish-oil extensively used in China for paying boats, junks, and rough wood-work.—*Hogg; Smith.*

ELÆOCOCCA VERRUCOSA. *Ad. Juss.*

Dryandra cordata, *Thunb.* | D. oleifera, *Lam.*

The Ying-tsze-tung or Yu-tung of the Chinese, is a tree of China and Japan and the Mauritius? It grows plentifully in the valley of the Yang-tze river. Its seeds or nuts furnish the wood-oil (tung-tsze-yu) of Chinese commerce. The fruits are very acrid.—*Hogg*, p. 461; *Smith.*

ELÆODENDRON, a genus of plants belonging to the Celastrinæ, growing in Ceylon, Berar, Garhwal, Darjiling Terai, and Burma. The wood of E. Roxburghii weighs about 53 lbs. the cubic foot.

ELÆODENDRON INTEGRIFOLIA. *M'Cl.*

Hsoak and Jouk-bin, BURM. This is a very plentiful, strong, fine timber tree, found throughout the forests of the Tounghoo and Pegu districts, as well as about Rangoon. It is adapted for fancy work and cabinetmaking.—*Dr. M'Clelland.*

ELÆODENDRON PERSICUM, a tree of Burma. Its leaves form the principal ingredient in the hla-pet or pickled tea.—*Imp. Gaz.*

ELÆODENDRON ROXBURGHII. *W. and A.*

Neerija dichotoma, *Roxb.*	E. glaucum, *Wall.*
Elæod. paniculatum, *W. A.*	
Tamrooj, . . CAN., MAHR.	Irkuli, ... TAM.
Merandu, Padrian, PANJ.	Karkava, ... ,,
Jamoa, ... ,,	Nirija, Neradi, . . TEL.

This tree is not uncommon in the eastern part of the Siwalik tract E. of the Ravi. It is found in Garhwal, throughout the Madras Presidencies, Bombay, Bengal. It is very variable. In the dry Segur forests about the foot of the Neilgherries, it is found of immense girth; and in the moist forests of the Animallays, at 2000 feet elevation, it is a very large tree. Again, in the Coimbatore plains it is met with as only a shrub, with sharply serrated leaves, but differing in no other way. The wood is not very strong or stiff, but is tough, close, and even-grained, and the surface beautifully curled and flowered, and of a reddish-brown colour, and suited for cabinet work; it is used by the natives for the manufacture of combs, etc., and is suited for picture frames, etc. A cubic foot unseasoned weighs 60 to 65 pounds, and 46 pounds when seasoned; and its specific gravity is ·736. The root and bark are used medicinally by the natives.—*Dr. J. L. Stewart; Drs. Wight and Gibson; F. v. Mueller; Beddome, Fl. Sylv.*

EL AJAM. Ajam, in Arabic, literally means foreign; but in the southern parts of Arabia, El Ajam is applied to the opposite parts of the coast of Africa.

ELAKOLA or Yelakola. MALEAL. A form of accounting in which words are used in place of figures; each syllable has a numerical value, and the whole is read backwards.

ELAM or Susiana was the country on the east of the southern portion of the Tigris, south of the Luristan mountains, and was the cradle of ancient sovereignty. Berosus mentions a legend to the effect that the first dawn of civilisation was there, and that the teachers of mankind came from the shores of the Persian Gulf. Susiana was known as Elam, and all the Babylonian and Assyrian dynastic arrow-headed inscriptions, hitherto deciphered, refer to Susiana as the cradle of sovereignty, where the ruins of great cities were discovered by Sir H. Rawlinson. The Elamites were a powerful nation in the early days of Abraham, before either the Assyrian or Babylonian governments rose into power. Chedorlaomer, king of Elam, held Canaan and Arabia Petræa in subjection.—*Bunsen*, iii. 352. See Iran; Lud.

ELA-MAVI. TEL. Its Sanskrit name is Sahakara, a fragrant kind of mango; hence the name from Ela, cardamom, fragrant.

ELAND, an antelope of Africa, the Oreas canna. In shape and general aspect it resembles a Gujerat ox, not unfrequently attaining the height of 19 hands at the withers, and weighing from 1500 to 2000 pounds. It might be introduced into India. It breeds readily in confinement.

ELANUS MELANOPTERUS, the black-winged falcon or elanet, is a pretty little hawk of Asia, Africa, and S.E. Europe.—*Jerdon.*

ELAPHRUS DAVIDIANUS. *Smith.*

Ss-puh-siang, . . CHIN. | Chu; T'o-luh, . . CHIN.

This is found in the eastern part of Manchuria, the S.W. of Koko-Nor, the district of Tarbagatai on the frontiers of Ili, and the northern parts of Sze-chuen province. The tail is used by the Taoist monks as a fan.

ELAPIDÆ, a family of venomous colubrine snakes. See Reptiles.

EL ARAM, mentioned in the Koran as the Sail-ul-Aram, or Flood of ul-Aram, is the dam of Mareb, built by Queen Balkis above the city of Saba. It burst A.D. 120. See Mareb.

ELARAMU. TEL. A root employed in dropsical affections, supposed to be that of Ophioxylon serpentinum.

ELATER. See Firefly; Fulgora; Insects.

ELATER NOCTILUCUS, one of the lantern flies. There are over 70 species of Elater in tropical America.

ELATERIUM, the Ku-kwa-chih of the Chinese.

ELATINACEÆ. *Lindley.* The water pepper tribe of plants, comprising two species of Bergia.

ELA-VANNIAR of Telingana, a caste of cloth merchants.

EL-AYNEN, a town of Nejid in Arabia, the birthplace of Mahomed-ibn-Abdul-Wahab. He founded the puritan Wahabi sect. He was born A.D. 1691. See Wahabi.

EL-BAKIA, the companions of Mahomed, the Astuwanat-ul-Ashab, the column of companions, are buried at El-Bakia.—*Burton's Mecca*, iii. 396.

EL-BEIT, a town founded by Tobba-ul-Akram (A.D. 90-140), grandson of Shammir Yerash. Shammir, in an invasion of China, perished with his army in the deserts of Tibet. Tobba, to revenge his grandfather's death, marched from Yemen, rebuilt Samarcand; according to Thalaba, carried war into China, where he built El-Beit, in which he left a colony of 30,000 Arabs, who continued a distinct people when Hamadun wrote in A.D. 553. See Samarcand; Shammir; Yemen.

ELBURZ. The mountains of Elburz, at the foot of the southern slopes of which the town of Teheran is situated. They extend from the plains of Kazvin on the west, to the town of Demavend

on the east, forming the division between the low belt of country on the southern shores of the Caspian, and the high lands of the central province of Irak. They are a portion of the lofty chain which branches off from the Caucasus, and, after passing through Azerbijan, the north of Persia and Afghanistan, terminate in the range of the Himalaya. The line of these mountains, though occasionally broken in Persia, especially in Khorasan, where it is intersected by several extensive plains, may easily be traced throughout the whole of this vast tract of Asia, 400 miles, from long. 50° to 56° east. The Elburz, although of the enormous height of 18,526 feet above the sea, has not a very imposing appearance from the plain of Teheran. Kazbek is 16,546 feet, but, with the exception of the huge cone of Demavend, no peak towers above its fellows, and from a distance the summit of the range seems to be nearly level. In summer the snow disappears almost entirely from the southern face, but on the northern side it remains in large quantities throughout the year. Like the generality of mountains in Persia, those of Elburz are but scantily clothed with vegetation, the plants growing on the slopes having a dry, blighted appearance, and, as usual, there is a total want of trees of natural growth. They are, like many other parts of this extensive range, rich in mineral productions, copper, iron, lead, and orpiment being found in large quantities. Five rivers, besides smaller streams, take their rise in the Elburz, within 25 miles north of Teheran.—*Chesney's Euphrates*, p. 4; *MacGregor*, p. 134.

EL-CHASAI or Elkesaites, called also Mughtasilah, or washers, a sect founded in the 1st century of the Christian era.

ELCHEE. PERS. An ambassador.

ELCHI, according to the maps Ilitsi, is the city known to older travellers as Khoten.

EL-DOZ. After the death, in A.D. 1205, of Mahomed of Gour, his kingdom was divided amongst his generals, and Kābul and Kandahar in Afghanistan fell to his slave El-Doz. He was, however, soon dispossessed by a prince of Kharasm, whose successor, Jalal-ud-Din, was compelled to yield to Chengiz Khan.

ELECAMPANE ROOT.

Ussul ur-rasun, . ARAB.	Bekh-i-zanjabil-i-shami, PERS.
Inuleaulnee, . . . FR.	
Alant-wurzel, . . GER.	

Elecampane root has an aromatic and slightly fetid odour. Formerly prescribed in dyspepsia, pulmonary complaints, and palsy.—*O'Sh.*

ELECTRICITY is evolved abundantly in tropical Asia, at the beginnning and close of the monsoon rains. The close of the S.W. monsoon is often attended with much electric disturbance. The N.W. storms at Calcutta are always attended with a great evolution of electricity. The art of sending information by means of electric currents passed along wires, was early perfected in India by Sir William O'Shaughnessy, and all British India is now in intercommunication, and in connection with Europe and America. Electric lights are often seen in the swamps of India, and in storms on the masts and spars of ships at sea.

ELEMENTS. In the philosophy of the Hindus, as stated in the Puranas, the elements enumerated are the same as given by Empedocles and Pythagoras. The order of Empedocles was ether, fire, earth, water, air. Pythagoras arranged them into fire, air, water, earth, and ether. In the Hindu Puranas are ether (akas), air (vayu), fire (tejas), water, and earth. The Chinese name them earth, water, fire, metal, and wood, each denoting five innate essences, and the nature of each essence is indicated by its corresponding form of matter. The Chinese consider that health or sickness depends on the proportions in which the five elements are present in the body.

ELEMI, Lan-Liang, CHIN., occurs in yellow transparent masses, which readily soften by the heat of the hand, and have a strong aromatic odour, and a hot, spicy taste. It is a gum-resin, and is said to be the concrete resinous exudation from one or more genera of plants, Amyris, Balsamodendron, Canarium, Elaphrium, and Icica. The Elaphrium elemiferum, *Royle*, yields Mexican elemi. Canarium commune, *Lam.* (synonym of Canarium zephyrinum, *Rumph.*), of the Spice Islands and Ceylon, also C. balsamiferum of Ceylon, are said to yield a resin which in odour and general appearance strongly resembles elemi. The resin called arbol-abrea at Manilla, which somewhat resembles elemi, is considered by M. Baup to be the product of Canarium album, a Philippine tree. Brazilian or American elemi is from the Icica Icicariba, *Marcq.*, and the resin of Courina from I. ambrosica. It is abundantly produced from a Canarium in the forests of the Philippines, where it often assists in giving a cheerful blaze to the fire of the traveller. It is also exported from Manilla as a drug. This gum-resin forms an essential ingredient in many of the finest varnishes.—*Waterstone; Faulkner; Clegh.*

ELEOCHARIS TUBEROSUS, or Scirpus tuberosus. A kind of arrowroot is prepared by the Chinese from its tubers.

ELEPHANT.

Hsen, ... BURM.	Hasthi, ... SANSK.
Olyphant, DUT., SCOTCH.	Fiel, ... SCAND.
Elephas, . . . GR., LAT.	Gallah, ... SINGH.
Hathi, ... HIND.	Elephante, ... SP.
Elephantes, ... IT.	Ani, ... TAM.
Beram, . . . MALAY.	Yeni; Yenuga, . TEL.
Fel, . . . AR., PERS.	Fil, ... TURK.
Pil; Gaja, . . PUSHTU.	

The source of the word elephant is doubtful. Sir J. E. Tennant supposes it to be the Hebrew Eleph, an ox, and Hindi, Indian. Pictet derives it from Airavata or Airavana, the elephant vahan of Indra, from Airavanta, son of the ocean. Burton says (Pilgrim. i. p. 275) it is from Pilu, in Sanskrit, or, as we now have it in Pushtu, Pil, in Persian Fel, which in Old Persian becomes Fil, and, with the Arabic article, El-fil, turned to Elephas in Greek. Lassen thinks it may be from the Arabic Al, and the Sanskrit Ilhadanta. The elephant is mentioned but two or three times in the Rig Veda, by the name Mrigo-hasti, the beast with a hand, and in such a way as to show that he was still an object of wonder and terror. In the Atharvan he occurs also, only rarely, under the name Hastin (the mriga now left off), and is exalted as the mightiest and most magnificent of animals. Nothing appears there to show that he had been reduced to the service of man. In the Syrian armies, anciently, the elephant seems to have been much employed. According to the Apocrypha (1 Maccabees vi. 33, 37), Antiochus, when warring against Judas Maccabæus, had in his army elephants guided by Indian drivers, each

stated to have had on his back a strong wooden tower, containing thirty-two fighting men. But this would amount to about 2½ tons weight, quite beyond what any elephant could easily carry.

The African elephant is not now known to be tamed, but there is no doubt that the Carthaginians availed themselves of the services of this species. Also, on the stupa at Bharhut, at least 2000 years old, there is a representation of a captive untamed elephant being led off by monkeys.

The elephant is the largest of terrestrial mammals. Though the Sumatran has been considered to differ, there is, according to most authors, only one African and one Asiatic species. The Asiatic species, E. Indicus, is found in Ceylon, in the southern and western parts of the Peninsula of India, in the forests at the foot of the Eastern Himalaya, in Nepal, in the sal forests, Tiperah, Chittagong, Burma, the Malay Peninsula, and the larger islands of the Eastern Archipelago. There are differences; the elephants of the same locality even vary in form and character. They attain their full height when 18 or 24 years of age, and range from 7 feet to 10 feet in height, up to the top of the shoulder. Twice round its forefoot gives nearly the exact height of an elephant. Elephants of Ceylon do not average above 8 feet in height, and never exceed 9 feet; yet Wolf says he saw one taken near Jaffna which measured 12 feet 1 inch, of course to the arch of the back. The Ceylon elephants are not so large as those of other parts of India. Mr. Corse says the greatest height ever measured by him was 10 feet 6 inches. He mentions the case of an elephant belonging to the Nawab of Dacca, which was said to be 14 feet high. The driver assured him that the beast was from 15 to 18 feet, yet when carefully measured it did not exceed 10 feet. The skeleton of an elephant in the museum at St. Petersburg, which was sent to Peter the Great by the Shah of Persia, measures 16½ feet in height, and probably this is the tallest authentic instance on record. In Ceylon an elephant is measured at the shoulder, and 9 feet at this point is a very large animal. The African elephant is perhaps not inferior to that of Pegu. Major Denham, in his expedition into Central Africa, met with some which he guessed to be 16 feet high; but one which he saw killed, and which he characterized as 'an immense fellow,' measured 12 feet 6 to the back. The fossil remains of an elephant discovered at Jubbulpur measured 15 feet to the shoulder.

In India they are classed according to their outer forms, viz. the Kumariah or princely, a strong-bodied animal; the Mirghi or deer-bodied; the Saukariah, or mixed breed between the Kumariah and Mirghi; and the Mirghabali, approaching the Mirghi. The Dantela is the tusked elephant. The Mukna has a head like that of the female, with comparatively small straight tusks. The elephant with nicely curved tusks is called the Palang (or bed) dant; and a one-tusked elephant is the Ek-danti or Ganesh, after the Hindu god of wisdom, who is represented with the head of an elephant, and one tooth.

The Kumariah is the most valuable, and is marked for the smallness of its head, the stoutness of its body, and swiftness of its pace, lifting its foot no higher than is sufficient to clear intervening obstacles. The Mirghi has a large head, and long legs in comparison to the size of its body; its paces are high, and rather clumsy. The cross between the Kumariah and the Mirghi is called Nasl, and partakes of the qualities of both. The Mukna is a tuskless male of either variety. They are large and strong animals, having been longer able to suck. Not more than one in three hundred has tusks; the others are merely provided with short grubbers. Those with tusks are usually males.

Elephants are gregarious, averaging in a herd about eight, although they frequently form bodies of fifty and even eighty in one troop. Each herd consists of a very large proportion of females, and they are constantly met without a single bull in their number. Baker had seen some small herds formed exclusively of bulls, but this is very rare. The bull is much larger than the female, and is generally more savage. On each side of the elephant's temples is an aperture about the size of a pin's head, whence in the season of rut a secretion exudes, which is called mada or dana. Whilst it flows the elephant is called matta, and at other times nirmada. The odour of this fluid, frequently alluded to in Hindu poetry (see Wilson's Meghaduta, i. p. 132), is compared to that of the sweetest flowers, and is supposed to deceive and attract the bees.

White elephants, either lepers or albinos, possibly in both of these conditions, are occasionally found; and the kings of Burma and Siam take, as one of their titles, the appellation of Lord of the White Elephant. Indeed, the presence of a white elephant in Siam is considered as a palladium for the king's life, and for the prosperity of the state. Crawfurd saw six in the king's stables. In Enarea, in eastern Central Africa, a white elephant is reverenced. When Jaya Chandra of Benares and Kanouj was defeated and slain by Shahab-ud-Din, Mahomed Ghori, in A.D. 1194, on the banks of the Jumna, between Chandwar and Etawa, a white elephant was captured, which is related to have refused to make obeisance to the sultan, and had almost killed its rider who endeavoured to force the animal to comply. In the time of Mahomed's grandfather, when Abrahah, the Christian king of Himyar, advanced against Kenanah in Hijaz, to revenge the pollution of the Christian church at Sennaa, he was seated on an elephant named Mahmud, distinguished by its bulk and skin of pure white.

Elephants rarely breed in captivity. They are becoming scarce in S. India; and in 1868 the Madras Government began to preserve female elephants. They frequent hilly and mountainous districts. They are met with in Ceylon at heights of 7000 and 8000 feet, and in the south of India at about 4000 and 5000 feet. In the Ceylon forests they come forth to feed about 4 P.M., and they invariably retire to the thickest and most thorny jungle in the neighbourhood of their feeding place by 7 A.M. In these impenetrable haunts, says Baker (Rifle, pp. 10, 11), they consider themselves secure from aggression. The period of gestation with an elephant is supposed to be twenty months or two years, and the time occupied in attaining full growth is about sixteen years. The whole period of life is supposed to be a hundred years, but Baker would increase that period by fifty.

These great mammals have been trained to take

part in theatrical representations. At present the elephant is usually employed for the transport of large tents and other articles of equipment, beyond the power, or of size inconvenient to be carried by camels or bullocks. Its load for steady work varies from about 15 to 20 cwt., exclusive of the pad or pack saddle. With this it travels at the rate of 3 miles an hour from 16 to 20 miles per diem; but it can perform and bear longer marches for some time without injury. On an emergency, a riding elephant can travel at the rate of 5 miles an hour, and will go about 40 miles in a day; but for a continuance its performance will not much exceed that of the baggage elephant. In India there are elephant batteries of heavy artillery needed for sieges, and the nobles of the Dekhan Hyderabad use them largely for riding.

The Agagir swordsmen of the Hamram Arabs hamstring the Abyssinian elephants with swords. The Abyssinians still eat the flesh and the' of hippopotami, as described by Strabo (lib. xvi. p. 772, and Diod. Sic. lib. p. 161).

In India, at the present day, the herds driven into the kraal or kheddah are sometimes very numerous. In January and February 18—? Mr. Sanderson captured 106 in the comparatively small forest tract near Dacca; and immediately afterwards, 28 more near the Garo Hills; and in 1874 (1st July) he captured 53 of a herd in Mysore.

The Ceylon elephants are found in all the uncultivated parts of the island, but their favourite haunts are near to the farms, to which they prove so destructive, that the colonial government paid 7s. 6d. for every tail of the animal which was brought to the authorities. Mr. Talbot paid £200 during one year for tails, which would give 600 as the number of elephants destroyed. One officer actually killed, during his residence on the island, no less than 600 of these gigantic animals. They are ordinarily shot with a rifle. The sportsman approaches his game in front, so that he may aim at either of the only two vital parts upon which a rifle ball will have any effect, one being directly in the forehead, through which the brain is penetrated, and the other behind the ear.

The catching and taming of elephants furnish a large source of revenue to the Nepal government. The T'haroo elephant catchers, having marked down a wild herd of 300 or 400 elephants, about 200 T'haroo collect together, mounted upon elephants, and accompanied by two large 'taking elephants,' highly fed, and thereby kept always must (sensual). The herd of wild elephants having been started, they get away trumpeting and whistling into the thickest part of the forest, hotly pursued by the mounted T'haroo, each of whom is provided with three or more nooses, called the moosack, which is made of very strong raw hide, well soaked in oil, and so ingeniously contrived, that when once attached to the elephant, the hind legs are gradually drawn together at every step it takes, until it is brought to a complete stand-still. The chase continues frequently for 20 miles at full speed, until in fact the wild herd becomes blown, and is brought to a stand. The danger then commences, from the wild ones dashing at their pursuers, in their turn causing the most intense excitement during half an hour, until the arrival of the two must elephants, whose bulk prevents their keeping up with the more active ones ridden by the T'haroo. These two elephants, each having three keepers upon their backs, dash into the herd. Their appearance, accompanied by the powerful nauseous odour emitted by must elephants, creates an immediate panic among the wild ones, and soon paralyzes their efforts of resistance. The active little T'haroo now slide down from their steeds, and, under cover of one of the must elephants, who pushes himself forcibly against the wild one selected from the herd, they in a most dexterous and daring manner slip the moosack on to each of the hind legs, which performance occupies about three minutes. The noosed elephant is then allowed to depart, and he goes off evidently delighted; but as the noose becomes contracted at every stride, he finds his intended flight brought to a close at a distance of sixty or seventy yards. After operating upon about fifty wild elephants in a similar manner, the T'haroo permit the remainder of the herd to abscond, and employ themselves in fastening the noosed elephants to separate trees, where they are detained from two to three weeks under the careful charge of the takers. If any of the captured show symptoms of violence, they are immediately punished most severely by two of the large tame elephants, who belabour them unmercifully with their trunks. Two such thrashings effectually cure the most insubordinate, and at the expiration of six weeks the once free and independent denizen of the forest has a keeper on his back, and becomes as quiet as if he had been in a state of subjection all his life. The full-grown female elephants of Nepal seldom exceed 7½ feet in height, but the males of forty years old, at which age they are considered to be full grown, average from 9 to 11 feet.

Elephants are captured in Siam by loosing female elephants in the forests at certain seasons, when the wild males return with them, and are captured.

In Ceylon, the Peninsula of India, Cachar, and Assam, the capture of herds is effected by driving them into a kraal or kheddah. In Travancore, the state and private persons have about a thousand pits as elephant traps. The pits are 8 feet square, rounded off towards the bottom, from which, with the aid of tamed elephants, the animal is raised and tamed. The tamed elephant is guided by the ankus (Ankasa, SANSK.; Arpe, GREEK; Cuspis, LATIN; Hendoo, SINGH.), a goad and guiding rod, in shape resembling a small boat-hook. It is figured in the medals of Caracalla of the identical form in use at the present day in India.

In August 1880, Mr. Sanderson delivered before the Viceroy at Simla, a lecture on the elephant. Out of many hundreds which Mr. Sanderson had measured in the south of India and Bengal, he had only found one male of 9 feet 10 inches vertical height at the shoulder, though the raja of Nahun had a tusker which measures 10 feet 5½ inches. Few female elephants attain 8 feet at the shoulder. A dead elephant, one that has died a natural death, is so rarely if ever seen, as to have given rise to the belief among some wild tribes, that wild elephants never die; whilst others believe that there is a place unseen by human eye, to which they retire to end their days. Mr. Sanderson had never seen the remains of an elephant that

had died a natural death, and had never met any one among the jungle tribes or professional hunters who had. The Singhalese have a superstition that on feeling the approach of dissolution, the elephant retires to a solitary valley, and there resigns himself to death. There is a similar belief in India.

Elephants are expert swimmers, though they cannot jump a trench 8 feet wide. Large numbers of them are annually sent across the tideway of the Ganges between Dacca and Barrackpur, and are sometimes six consecutive hours without touching the bottom. Mr. Sanderson had seen an elephant swim a river 300 yards wide with his hind legs tied together. They are sometimes drowned.

At that lecture Mr. Sanderson gave the opinion that there is no diminution in the numbers now obtainable in Bengal; and that in Southern India elephants are annually appearing in places where they had never been heard of before. But the diminution of the forests, the increase of population, the destruction of the weaker by the stronger males, the captures of such great number, the deaths during the capture, and the cessation of breeding amongst the captives, cannot but greatly diminish the numbers of the free elephants. Out of the 53 driven into the kheddah in Mysore on the 1st July 1874, no fewer than —? died before they could be tamed.

During the three years previous to Mr. Sanderson's lecture, 503 elephants had been captured by the Dacca kheddah establishment in a tract of country 40 miles long by 20 broad, in the Garo Hills, whilst not less than 1000 were met during his hunting operations. Baber states that in his time elephants abounded about Calpi, and in Karrah and Manikpur; and Akbar fell in with a herd near Colhras, in the east of Malwa.

Under Mr. Sanderson's arrangements, when an elephant chases the takers, they betake themselves to the shelter of tree trunks, bamboo clumps, or long grass, and it is astonishing to see how they frequently escape uninjured. He had known many cases of men standing against a tree, or hiding in tufts of long grass, within a couple of yards of elephants that were pausing in indecision, without being discovered, though the elephants were evidently aware of their close proximity, as they kicked up the ground in anger, and then made off. In such cases the slightest movement would have led to the hunters being instantly trampled to death. Men are frequently killed, but they are almost always young hands who are learning. He saw one such make a narrow escape. He ran from an elephant and climbed a tree; the elephant butted the trunk, and the man fell down, but his pursuer was so astonished at the sight, that she fled at once. Sometimes drives are conducted by torchlight, and these seldom fail, owing to the elephant's fear of fire. The scenes on these occasions are exciting beyond description.

The African elephant is usually less in size than the Asiatic species. The head is rounded, the front is convex instead of concave, the ears are much larger, and the general physiognomy is quite different from that of the Indian elephant. The tusks of the adult males of this species are very large, and of great value. They are imported into England in great quantities from different parts of the African continent, in the unexplored interior of which this huge animal is still met with in great abundance.

The elephant has, besides the tusks, only grinders, twenty to twenty-three on each side of the jaw. The milk grinders, four in number, one in each side of either jaw, are completed soon after birth, and are said to cut in about eight or ten days. The tusks may be 8 or 10 feet long, or only as many inches. They may weigh 325 lbs. the pair, or they may not reach as many ounces. In rare instances a considerable portion of the tusk is found to have been injured by a musket ball, the iron or leaden bullet being enclosed in it. Two instances, if not more, have occurred in which these bullets were of gold, showing that the shot was fired by royal hands, for it is the reputed custom among Eastern potentates to use gold or silver bullets in their sports. One of these golden bullets is stated to have been cut through by a combmaker in dividing a tusk. The portion of the tusk thus injured is generally useless for any ornamental purpose for many inches each way around the ball; but cases have occurred in which a ball, and even a spear-head, has entered at the thin part near the skull of the animal, and become embedded without injury to the external surface.

The elephant has been discovered fossil in the strata of the Nerbadda and in Burma. Amongst the remarkable remains brought from the Siwalik Hills in Northern India by Captain Cautley and Dr. Falconer, were the remains of several species of the genus Elephas and other proboscidean animals. This fossil fauna is composed of representative types of mammalia of all geological ages, from the oldest of the tertiary periods down to the most modern, and of all the geographical divisions of the old continent, grouped together into one comprehensive assemblage. Among the forms contained in it, there are, of the Pachydermata, several species of mastodon, elephant, hippopotamus, rhinoceros, anoplotherium, and three species of equus; of the Ruminantia, the colossal genus sivatherium, which is peculiar to India, with species of camelus, bos, cervus, and antelope; of the Carnivora, species of most of the great types, together with several undescribed genera; of the Rodentia and Quadrumana, several species; of the Reptilia, a gigantic tortoise (colossochelys), with species of emys and trionyx, and several forms of garials and other crocodiles. To these may be added the remains of struthiones and other birds, and also fishes, crustacea, and mollusca. The genus Elephas, in the collection which has been desposited in the British Museum, includes six species or varieties, viz.:

E. planifrons, distinguished by the flatness of the forehead and the intermediate character of its molar teeth.

E. namadicus, with a great development of the cranium, and teeth closely allied to those of the Indian species.

E. hysudricus, with a turban-like vortex of the skull and teeth, whose structure approaches that of the African elephant.

E. Ganesa is the most remarkable of the Siwalik species. A skull exists, with remains of the other species, in the British Museum. The total length of the cranium and tusks is 14 feet; length of the skull, 4 feet 2 inches; width of the muzzle, 2 feet; length of the tusks, 10 feet; circumference of the

tusk at the base, 26 inches. The other two species are named E. insignis and E. bombifrons. Besides these, the Bengal Asiatic Society's Museum had one called E. Cliftii. — *Owen's British Fossils; Falconer and Cautley, Fauna Antiqua Sivalensis; Elphinstone; Crawfurd, Embassy; Beng. As. Soc. Cat.; Smith's Nepal; Yule, Embassy; Yule, Cathay; Gosse, Nat. Hist.; Tennant's Sketches; Bikmore, Trav.; Wallace, Archip.; Aide, Memoire; Studies*, pp. 24–26; *Williams' Story of Nala*, p. 195.

ELEPHANTA, or Gharapuri, is an island about six miles from Bombay, and four from the mainland. It was named Elephanta by the Portuguese, from a large stone elephant, 13 feet 2 inches in length, and about 7 feet 4 inches high, that stood near the old landing place on the S. side of the island. The most striking of the sculptures are the linga and a colossal three-faced bust or trimurti, or tri-form figure. The central face is mild; on its right is that of Rudra (Siva), and on its left Vishnu.—*Ferg. and Burgess*, 465, 568.

ELEPHANTA, the designation which the October storms bear, all over the western side of India, is conferred on them as occurring about the time when the sun is in the constellation Hast'hi, the Sanskrit for elephant. But as they reached Bombay from nearly due east, their name is there not unnaturally imagined to have been conferred on them from the celebrated island Elephanta, or Gharapuri. The elephanta commonly makes its appearance a fortnight or so after the S.W. monsoon weather has fairly cleared up, when showers have almost ceased to fall, the barometer has become high, the sky bright and clear, and the alternating sea and land breezes have set in. For three or four evenings before its appearance, superb piles of thunder-clouds are seen to accumulate about 3 o'clock every afternoon over the Ghats; they soon ascend some way in the air, advancing apparently against the sea-breeze,—that is, the upper and lower strata of air move opposite ways to each other. Magnificent displays of lightning, with low growling thunder, prevail as twilight sets in; an hour or two after sunset the sky resumes its serenity. At length the clouds grow darker and more watery, the thunder becomes louder, the lightning more brilliant; they tumble up the sky, rolling in vast masses over each other, till a sudden squall bursts, and a deluge of rain follows. This scarcely ever occurs earlier in the day than 3 P.M., and it very seldom continues till dawn, though after three or four hours' interruption it sometimes resumes before noon next day. When once the gale is over, the sky in general clears up, the clouds vanish, the alternate winds resume sway,—hot days and dewy nights succeed, and the settled season commences. From 1840–1857, Bombay was five times without a squall from the east, with rain and thunder; it has usually happened betwixt the 7th and 10th October.—*Bombay Standard and Chronicle of Western India.*

ELEPHANT APPLE, Feronia elephantum. Elephant creeper, Argyreia speciosa. Elephant-foot yam, Dioscoria, *sp.* Elephant gourd, Hasti kosataka, SANSK.; Ennuga bira, TEL.; Elephantopus scaber. Elephant grass, Typha elephantina.

ELEPHANTIASIS.

Da'l'l-Fel, . . . ARAB.	Goni-parangi, . . SINGH.
Hat'hi-ka-paon, . DEKH.	Ani kal, ... TAM.
Gaja-pada, . . . SANSK.	Yenuga-kalu, . . TEL.

This disease generally attacks the legs and feet; but the arms, the skin of the scrotum, are sometimes affected by it.

ELEPHANT MOUNTAIN, five miles N.E. from Madura. It is a block of gneiss, 2 miles long, a quarter of a mile wide, and about 250 feet high. A porch and a temple have been hewn out of one side of it.

ELEPHANTOPUS SCABER. *Linn.*

Shamdulum, . . . BENG.	Husti kasaka, . . . TEL.
Samdulun, . . . HIND.	Enuga bira, ... ,,
Ana shovadi, MAL., TAM.	Eddu nalike chettu, ,,

This plant grows in the Peninsula of India, and its leaves are used in medicine.

ELEPHANT ROCK. In Ceylon, Allagalla, Ætagalla, and Goomeragalla, all signify the Elephant Rock. The former—the grand mountain up whose precipitous side runs the railway incline of 1 in 45 for 13½ miles—is simply the Allia (Untusked Elephant) Rock. The rock which, like an elephant couchant, guards Kornegalle, Ætagalla, is the Tusked Elephant Rock; and the strange massive block which towers over and gives its name to one of the finest estates in the Knuckles, is the Goomeragalle, Speckled Elephant Rock. The rock at a distance gives the outline of an elephant, and the patches of cryptogams which spot its precipitous sides has led to the specific name, —the Goomera elephant being a semi-leprous one, in an advanced stage of the cutaneous affection.

ELEPHANT'S TAIL, Hair of

Hathi-dum-ka-bal, DUKH.	Ani kal myr, . . . TAM.
Beram rambut, MALAY.	

Of this article, Yenuga toka ventrucalu, TEL., rings, bracelets, and other female ornaments are made in India.—*Ains. Mat. Med.*

ELEPHANTS' TEETH are obtained in South Africa, India, Ceylon, Burma, Siam, and Cambodia. They should be chosen without flaws, solid, straight, and white; for if cracked or broken at the point, or decayed inside, they are less valuable. Every specimen, however, is useful to a greater or less degree, and can be entirely used. The largest and best delivered in China weigh from 5 to 8 to a pikul, and decrease in size to 25 in a pikul. The number of articles which the Chinese make of it, and the demand for them on account of their exquisite workmanship, render the consumption very great. The circular balls which the Chinese make of ivory, as well as their miniature boats, fans, chessmen, boxes, and fancy articles of all descriptions, are specimens of carved work unequalled in any other part of the world. From a quantity of ivory not weighing over three pounds, they will make toys worth a hundred dollars. The largest teeth are sometimes valued at 120 dollars a pikul, but the article usually ranges from 50 to 80 dollars per pikul. A large proportion of the ivory brought to China is re-exported in fancy carved ware.—*Morrison, Co. D.*

ELEPHAS INDICUS. *Cuv.*

Ani, . CAN., TAM., TEL.	Hathi, ... DUKH.

The elephant occurs in Ceylon, in the south of the Peninsula of India, at the foot of the Himalayas, in Burma, and in the Eastern Archipelago.

Elephas primogenus, the mammoth. One was discovered in 1799 by a Tungus, near Lake Oncoul in Siberia.

ELETTARIA CARDAMOMUM. *Wh. and Mat.*

Alpinia cardamomum, *R.*
Amomum repens, *Woodr.*
Am. cardamomum, ,,
Am. racemosum, *Lam.*
Cardamomum minus.

Elettaria, *L. and E. Pharm.*
Var. α. E. cardamomum minor, *Rheede.*
Var. β. E. cardamomum major, *Smith.*

Kakula, Ebil, . . ARAB.
Pa-lah, Ba-la, . . BURM.
Cardamom plant, . ENG.
True, Lesser, Long cardamom, . . ,,
Wild card. of Calcutta, ,,
Choti Ilachi, . . HIND.
Guzerati Ilachi, . ,,
Barra Ilachi, . . HIND.
Capulaga, Puwar, MALAY.
Yalum, . . . MALEAL.
Kakelah-seghar, . PERS.
Dokeswa, . . SYLHET.
Ela cheddi, . . . TAM.
Elaki chettu, . . TEL.
Yela kulu, Sanna elaki, ,, .

The various vernacular names and the botanical synonyms will show that both the scientific and the unscientific world have believed that the round and conical-seeded cardamoms are the products of two species; but Mr. Thwaites, after a careful comparison of growing specimens, was satisfied that the plants producing respectively the round and the long cardamoms of commerce are not distinct species, but merely two varieties of the present species. In every essential particular the structure is similar in the two plants, the only difference being that var. α, which produces the round cardamom, is a little taller, with rather narrower and less firm leaves, and that its fruit is more aromatic as well as different in form from that of var. β. The seeds of both varieties are used by the Singhalese to chew with their betel, and as medicines. The long cardamom, called Ensal in Ceylon, grows wild in the Ceylon forests up to 3000 feet; but the round cardamom is there only a cultivated plant, and is called by the Singhalese Rata-ensal. The wild or Ceylon cardamoms are of less value in the market than those of Malabar. In the Travancore forests they are found at elevations of three or five thousand feet. The mode of obtaining them is to clear the forest of trees, when the plants spontaneously grow up in the cleared ground. Before the commencement of the rains in June, the cultivators seek the shadiest and woodiest sides of the loftier hills; the trees are felled, and the ground cleared of weeds; and in about three months the cardamom plant springs up. In four years the shrub will have attained its full height, when the fruit is produced, and gathered in the month of November, requiring no other preparation than drying in the sun. The plant continues to yield fruit till the seventh year, when the stem is cut down, new shoots arising from the stumps. They may also be raised from seeds. Cardamoms are much esteemed as a condiment, and great quantities are annually shipped to Europe from Malabar and Travancore. In commerce there are three varieties, known as the short, short-longs, and the long-longs. Of these the short are more coarsely ribbed, of a brown colour, and are called the Malabar cardamoms or Wynad cardamoms. They are reckoned the best of the three. The long-longs are more finely ribbed, and of a paler colour. The seeds are white and shrivelled. The short-longs merely differ from the latter in being shorter or less pointed. It is usual to mix the several kinds together when ready for exportation. Some care is required in the process of drying the seeds, as rain causes the seed-vessels to split, and otherwise injures them; and if kept too long in the sun, their flavour becomes deteriorated. In Travancore they are chiefly procured from the high lands overlooking the Dindigul, Madura, and Tinnevelly districts. In these mountains the cultivators make separate gardens for them, as they thrive better if a little care and attention be bestowed upon them. Cardamoms are a monopoly in the Travancore State, and cultivators come chiefly from the British provinces, obtaining about 200 or 210 rupees for every candy delivered over to the Travancore Government. The average number of candies for the years 1845–54 was about 300.—*H. D.; Thw. En. Pl. Zeyl.* p. 318. See Cardamoms.

ELETTARIA FLORIBUNDA. *Thw.* A plant in the Ambagamowa forest district. E. involucrata, *Thw.*, is of the Central Province, in damp forests, at an elevation of 4000 to 6000 feet. E. nemoralis, *Thw.*, of the forests in the Reigam and Pasdoon Corles.—*Thw. En. Pl. Zeyl.* p. 319.

ELEUSINE, a genus of plants of the natural order Panicaceæ. E. calycinia, coracana, Indica, and stricta occur in India.—*Voigt.*

ELEUSINE CORACANA. *Gært.*

Cynosurus coracanus, *Linn.*

Murua, Murha, BEN., HD.
Raggi, . . CAN., DUKH.
Mandal, Munrivi, HIND.
Maud, Koda, . . ,,
Chalodra, ... ,,
Mutami tajetti pullu, MALEAL.
Mandwah, . . . PERS.
Rajika, Natchenny, SANS.
Nauguli, ... SIND.
Korakan, . . . SINGH.
Kayveru, kelwa-ragu, TAM.
Tamidelu, ... TEL.
Chiviki velama, Ragulu, ,,

This is cultivated throughout India, and is the most productive of all Indian cereals. It is the staple food of the inhabitants of Mysore; and, though coarse in appearance, is a wholesome and nutritious grain. It is largely used in the Rajputana desert. Its chemical composition in 100 parts ranges about 11·50 moisture, 6·88 of nitrogenous matter, 79·31 starchy matter, 0·85 fatty or oily matter, with 2·37 of mineral constituents. It is very indestructible, and may be preserved for about sixty years, if carefully deposited in grain caves or pits. These pits are generally placed in hard, dry ground. The pit is formed by digging a small hole of the size to admit a man, and as the pit descends it is enlarged into a moderate-sized circular room. After the pit is dug out, a large fire is lit in it to harden the sides. These stores are of inestimable value in moderating dearths. The straw is a very good fodder for cattle, and it too keeps well. Large stocks of it were at one time in Mysore, kept in the granaries of wealthy farmers. When cheap, it sells in Bangalore at 7 marcals or 84 seers for a rupee; or if dear, 2¼ marcals or 30 seers. It is usually sown in fields mixed with buller, togari, hutchellu, lave, kari, jola, sasuva, and haralu. The drill consists of many reeds with holes, so that the whole of the seeds are sown through their respective holes in parallel lines. A fermented liquor is prepared from it, called bojali or murwa, chiefly drunk in the Mahratta countries, and as a drink in the Sikkim Himalaya; it seems more to excite than to debauch the mind. The millet seed is moistened and allowed to ferment for two days. Sufficient for a day's allowance is then put into a vessel of wicker-work, lined with India-rubber to make it water-tight, and boiling water is poured on it with a ladle of gourd, from a large iron caldron that stands all day over the fire. This fluid, when quite fresh, tastes like negus of Cape sherry, rather sour.—*Roxb; Mad. Ex. Jur. Rep.; Cleghorn; Stewart; Ainslie.*

ELEUSINE INDICA. *Gært.*

Cynosurus Indicus, *Linn.* | Panicum compress., *Forsk.*
Mal-ankura, . . . BENG. | Hsen-gno-myeet, BURM.

Grows throughout India. Tufts of it are conspicuous everywhere among other grasses of Tenasserim.—*Mason.*

ELEUSINE STRICTA. *Roxb.*

Ragi, ... HIND. | Maddi rubba chettu, TEL.
Pedda sodi, . . TEL. | Pedda chollu, . . ,,

This species is larger in size and more productive than E. coracana. It is cultivated in S. India to a large extent, and, like Dolichos uniflorus, yields in favourable seasons more than a hundred-fold. The spikes are straight and large, and their great weight bends the head down in a horizontal direction.

ELEUSIS. The mysteries of Osiris and those of Eleusis were of the same character, commemorative of the first germ of civilisation, the culture of the earth, under a variety of names, Ertha, Isis, Diana, Ceres, Ella. In the terra-cotta images of Isis, frequently excavated about her temple at Pæstum, she holds in her right hand an exact representation of the Hindu lingam and yoni combined; and on the Indian expedition to Egypt, of 1801, Hindu soldiers deemed themselves amongst the altars of their own god Iswara (Osiris), from the abundance of his emblematic representatives. —*Tod.* See Earth; Mrittika.

ELEUTH, a tribe of the Kalmuk, dwelling in Zungaria. See Kalkas.

EL-EYN. ARAB. The evil eye.

EL-FATTAHA, a town at the southern opening of the Hamrin Hills, at which the Tigris makes its exit from the hills.

ELGHAR or Yelghar. PERS. The forced march of an army, or sudden incursion, or raid.

ELGIN. The Right Honourable James, Earl of Elgin and Kincardine, K.T., G.C.B., and G.M.S.I., succeeded Lord Canning as Viceroy of India on 12th March 1862. He was born in London in 1811, and died and was buried at Dharmsala in the Kangra valley of the N.W. Himalaya on the 20th November 1863. In April 1857 he was appointed Ambassador to China; and in August 1858 concluded a treaty at Tien-tsin. He subsequently concluded another treaty with the Japanese at Jeddo, and he returned to Great Britain. In March 1860 he was appointed Ambassador to the Emperor of China, and a treaty was signed at Pekin. The French convention was signed the following day.—*Loch, Narrative of Events.*

ELIJAH, also called Elias, a Hebrew prophet of Tishbeh beyond the Jordan, in Gilead. The Ali Ilahi sect of Karund revere him as an incarnation of the deity. A makān or resting-place of Elias exists on the borders of the Kassan and Sulmania governments of Kurdistan. The Mahomedans believe that Elias never died, but is still on earth, awaiting the second coming of Christ. These views they derive from the Jews, some of whom even took Christ for Elias. The Mahomedans identify Elias with Khajah Khizr. A well and a chapel in the ascent to Mount Sinai are named after the prophet Elias, whom the Scriptures state to have sought refuge from the persecutions of Jezebel in the solitudes of Horeb (see 1 Kings xix.). Its presence in this situation, mentioned also by Edrisi, seems to be an argument for the identity of Jabl Musa with the Sinai of the Scriptures.—*Hamilton's Sinai*, p. 28. See Karund.

ELIM, mentioned in Numbers xxxiii. 10,—'they removed from Elim, and encamped by the Red Sea,'—Wellsted (Tr. ii. p. 44) supposes to be Girandel, where there is still water and palm trees.

ELIUN, also Helyun, the Most High God of the Egyptians,—Higuthan kabiri.

EL-KAJA. ARAB. Trichelia emetica, *Forsk.* A tree 30 to 40 feet high. Its fruit is fragrant, and is an ingredient of the abir or besan, with which the Mahomedan women wash their hair.—*Hogg.*

EL-KASR, a lofty, extensive, but disturbed mound in Babylon, supposed by some to have been the site of the royal palace of Nebuchadnezzar, and the hanging gardens of his queen Amytis.

EL KUSH, an ancient town of Babylonia; its ruins are 11 miles E.S.E. of Felujah. The ancient kingdom of Babylonia comprehended a narrow tract along the river Euphrates, extending from the neighbourhood of Erech, or from about the modern town of Shaik-el-Shuyukh, to Babel, a distance of about 154 miles in a direction westward of north, and continuing from thence 287 miles further in the same direction to Calneh, on the Khabur. The kingdom extended eastward till it joined Assyria, including Akkad and two other cities no less remarkable. One of them bears the name of El Kush, extensive ruins about 11 miles E.S.E. of Felujah, and the other is the supposed site of antediluvian Sippara, Siferah of the Arabs (Lieut. Lynch), which is within the Medina wall, near the southern extremity.

ELL.

Eln, . . ANGLO-SAXON. | Hat'h, ... HIND.
Zira, ... ARAB. | Auna, Cauna, . . . IT.
Aune, Aunage, . . FR. | Ulna, ... LAT.
Elle, ... GER. | Elina, . . OLD GERMAN.
Aleine, . . . GOTHIC. | Ratni, Aratni, . SANSK.
Olene, ... GR. | Ana, ... SP.

The ell measure is taken from the length of the forearm. Aratni, SANSK., is the short ell measure.

ELLA, in Hindu mythology, is the earth personified,—the Eartha of the Saxons, Ard in Hebrew. She is sometimes described as the daughter, sometimes as the sister, of Icshwacu. In Hindu mythology, according to Colonel Tod, the serpent (Budha) ravished Ella, daughter of Icshwacu, the son of Manu, whence the distinctive epithet of his descendants in the East, Manus, or men. He says that in Portici there is a lingam entwined with a brazen serpent, brought from the temple of Isis at Pompeii; and many of the same kind, in mosaic, decorate the floors of the dwelling-houses; and that there are wreaths of lingams and of the yoni over the door of the minor temples of Isis at Pompeii, while on another front is painted the rape of Venus by Mercury. The Lunar race, according to the Puranas, are the issue of the rape of Ella by Budha. See Eleusis; Ila.

ELLA KUDA, a term given to the Eastern Ghats, from Vella, white, Konda, mountain.

ELLAMMEN, one of the Gramma-devata in Southern India. She has been identified by Hindus with Renuka, the wife of Jamadagni, father of Parasurama.

ELLENBOROUGH, EARL OF, Governor-General of India from the 28th February 1842 to the 23d July 1844. He had been President of the Board of Control during the Duke of Wellington's administration. While holding the office of Governor-General, he moved armies into Afghanistan to recover the positions which had been lost during

his predecessor Lord Auckland's time, by the retreat and destruction of a division of the British Indian army. And the officers who won distinctions in this forward movement were Pollock, Nott, Sale, Dennie, Monteith, Broadfoot, Fenwick, Mayne, Havelock, Pattison, and Oldfield.

During his administration, General Sir Charles Napier defeated the Amirs of Sind, and that country was annexed, and slavery abolished. After the death, without heirs, of the Maharaja Sindia, in December 1843, the Maharani, with the approbation of the Indian Government, adopted the deceased's nearest relative, a boy named Jyngi Rao Sindia, who assumed the title. But in the dispute that occurred as to a regent, Dada Khasgee Wala obtained power. He was opposed to the British, and an army under Lord Ellenborough moved against Gwalior, and two battles were fought on the 29th December 1843, one at Maharajpur by Sir Hugh Gough, the other at Punniar by General Grey. The Gwalior fort was then surrendered. In April 1844 Lord Ellenborough was recalled by the Court of Directors, under the provisions of Mr. Pitt's bill of 1784.

ELLICHPUR, a town in East Berar, of considerable size, though greatly decayed. A military cantonment of the Hyderabad contingent is near. The town is in lat. 21° 15′ 20″ N., and long. 77° 29′ 30″ E., and has about 27,017 inhabitants.

ELLIOT, CHARLES MORGAN, Captain Madras Engineers, obiit 1853 ? brother of Sir Henry Elliot. He was employed from 1846 to 1849 in the Magnetic Survey of the Indian Archipelago. In this duty he visited Moulmein, Madras, Nicobar, Sambuanga, Penang, Pulo Dinding, Borneo, Celebes, Pulo Penang, Singapore, Carimon, Pulo Buaya, Sumatra, Batavia, and the Kokos or Keeling Islands.—*Magnetic Survey.*

ELLIOT, SIR HENRY MIERS, K.C.B., one of fifteen children of Mr. John Elliot of Pimlico Lodge, Westminster. He was born in 1808; was educated at Winchester School and Oxford, from which he passed into the civil service of the E. I. Company in Bengal, and twice filled the post of Foreign Secretary. He published, in 1846, a Supplementary Glossary of Indian Terms. In 1849 he published the first volume of his Bibliographical Index to the Historians of Mahomedan India. He collected many Arabic, Persian, and Urdu manuscripts for a History of India as told by its own Historians, but he died, aged 45, in 1853, at the Cape of Good Hope, before he could write more than the first volume. His widow finally entrusted the completion to Professor John Dowson, M.R.A.S., of the Staff College at Sandhurst; and in the ten years 1867 to 1877 that learned man produced eight volumes, containing extracts illustrative of Indian and Central Asian history from about 200 authors. The eight large volumes gave detailed accounts of 143 historical works, with extracts from their contents in English. Besides the original text of nearly all these works, he collected a large number of local histories, biographies, collections of letters, geographical treatises, etc., illustrating Indian history, and some works on other subjects. It consists of 421 manuscripts, chiefly Persian, and a large quantity of unbound papers, partly notices on historical manuscripts preserved in various Indian libraries, and partly translations of historical works prepared for him. He was possessed of a vast store of information, which his early death prevented him giving to the public.

ELLIOT, SIR WALTER, K.C.S.I., a member of the Madras Civil Service, who wrote on Hindu Inscriptions, Lond. As. Trans. iv. p. 1; Catalogue of Mammalia in the Southern Mahratta Country, Mad. Lit. Trans. 1839, x. pp. 92, 207; On the Language of the Gonds, with a Vocabulary, Bl. As. Trans. 1848, xvii. p. 1140; Illustrations of the History of Southern India, Lond. As. Trans. iv. p. 1, Mad. Lit. Trans. vii. p. 193; Notice of Expedition into S. Africa, with Descriptions of New Species of Rhinoceros, ibid. xiv. p. 181; Notice of the late Dr. Turnbull Christie, ibid. xv. p. 150; Description of a New Species of Terrestrial Planaria, ibid. 182; Flora Andhrica, Madras, 1859.—*Dr. Buist's Catalogue.*

ELLORA, in lat. 20° 2′ N., and long. 75° 11′ E., in the Dekhan, N.W. of Aurangabad. The entrance to the caves is 2064 feet above the sea. It is called by the people Yerula, and Ballora, and Varula, and is near Roza in the Dowlatabad province of the Dekhan. The plateau of Roza, in the face that looks into the valley of the Godavery, is scarped, and the porphyritic greenstone amygdaloid rock has been excavated into great caves and temples, and dwellings about thirty in number. They are partly Buddhist, partly Jaina, and partly Brahmanical.

The Buddhist group of cave-temples occupies the southern extremity of the crescent in which the caves of Ellora are excavated. Later on, the northern horn was taken possession of by the Jains, who excavated there a remarkable series of caves. But between these two, at an intermediate age, the Brahmans excavated some 15 or 16 caves, rivalling those of their predecessors in magnificence, and exceeding them in richness of decoration. The series culminated in the Kailasa, which is the largest and most magnificent rock-cut temple in India, and is the one in which their Brahmanical authors emancipated themselves from the influence of Buddhist cave architecture. The most northern there is a magnificent temple, known as Sita's Nhani or Dumnar Lena; others are Ravan ka Khai, Rameswara, Nilakant'h, Teli-ka-Gana, Kumharwara, Janwasa, and the Milkmaid's Cave, the last near a high waterfall.

The Ellora Buddhist caves are the Dherwara, Do Thal, Maharwara, Tin Thal, and Viswakarma chaitya.

The Brahmanical caves are Dasa-Avatara, Dumnar Lena, Kailasa monolithic temple-caves between Kailasa and Rameswara, Rameswara, Nilakantha, Teli ka Gana, Kumharwara, Janwasa, Milkmaid's Cave, and small caves above the scarp.

The Jaina caves are Chota Kailasa, Indra Sabha, and Jaganath Sabha.

The chief structure, called the Kailas, is a perfect Dravidian temple, complete in all its parts. It is one of the most wonderful and interesting monuments of architectural art in India. It is a model of a complete temple such as might have been erected on the plain. In other words, the rock has been cut away externally as well as internally. It measures 138 feet in front, the interior is 247 feet in length by 150 feet in breadth, the height in some places being 100 feet. This temple is said to have been built, about the 8th century, by Raja Edu of Ellichpur, by whom the town of Ellora was founded, as a thank-

offering for a cure effected by the waters of a spring near the place. The lofty basement of the temple has a row of huge elephants and sārdulas or lions, griffins, etc. It is surrounded with figures also of Vishnu, and the whole Puranic pantheon.—*Fergusson's Eastern Architecture*, p. 334; *Ferg. and Burg.* p. 450. See Architecture.

ELLORE, a town in the Godavery district of the Madras Presidency, in lat. 16° 42′ 35″ N., and long. 81° 9′ 5″ E., with 25,487 inhabitants; it is to the west of the Kolar lake in the Northern Circars. It is but little elevated above the sea, and is a civil station of the Madras Presidency. It is called by the natives Upu (or salt) Ellore, to distinguish it from Rai (or stony) Ellore, the Vellore of the maps.

ELM-BARK is the Yu-pi, Fen, or Tsien-yeh-yu-pi of the Chinese. The liber of the barks of Ulmus Chinensis and U. pumila are used in China medicinally.—*Smith.*

ELOHIM, God, the eternal Lord, is sometimes so called in the Bible, the meaning being Godhead or Gods; also called Jahvah (pronounced Jehovah), but the word was not spoken,—Adonai, the Lord, being used instead. Gen. ii. 3 alone uses Jehovah. —*Bunsen*, iv. p. 379. See Elim.

ELPHINSTONE, the Honourable MOUNT-STUART, a civil servant of the East India Company, who went as ambassador to Shah Shuja-ul-Mulk, king of Afghanistan. In 1802 Shah Mahmud was driven out by Shuja-ul-Mulk, the younger brother of Zaman Shah, and Shah Shuja was still in possession of the undivided empire of Ahmad Shah at the time of Mr. Elphinstone's mission in 1809. This mission was sent for the purpose of concerting with Shah Shuja the means of mutual defence against the threatened invasion of Afghanistan and India by the Persians, in confederacy with the French. He proceeded through Bikanir, Bahawulpur, and Multan, and reached Peshawur on the 25th February. The expenditure was lavish, and on the 14th June the mission left Peshawur on its return. He had scarcely left Kābul ere Shah Shuja was driven out by Shah Mahmud, with the aid of Futteh Khan. He was afterwards Resident at Poona, while the last Peshwa, Baji Rao, was ruling the Mahratta states, and subsequently was Governor of Bombay. He wrote—Account of the Kingdom of Caubul, and its Dependencies in Persia, Tartary, and India; History of India, Hindoo and Mahomedan Periods; Report on the Territories conquered from the Paishwa. He is the most judicious and impartial of all Indian historians.—*Dr. Buist's Catalogue.*

ELPHINSTONE, Lord, Governor of Madras 1836 to 1840; Governor of Bombay at the period of the revolt of the soldiery of Bengal, during which some of those of Bombay also were implicated. Died 19th July 1860.

EL-SHAM-i-SHARIF, also Sham, the eastern names of Damascus.

EL-SHARK (Us-shark), the East, the popular name in the Hejaz for the western region as far as Baghdad and Bussora, especially Nejd. The latter province supplies the Holy Land with its choicest horses and camels.—*Burton's Mecca*, ii. 4.

ELTAZAI, a branch of the Kambarari tribe, who occupy Bagban in Baluchistan.

ELTHARIAH, descendants, more or less pure, of Rajputs, and other Kshatriyas of the plains, who sought refuge in the Nepal mountains from the Mahomedans, or took military service as adventurers. The Elthariah speak only the Khas language.

ELUKA JIDI CHETTU. Tel. A plant resembling mint, eaten in times of dearth; perhaps Hydrocotyle rotundifolia or Marsilea dentata.

ELUTH, also called Sangariam, a Mongol tribe, whose mode of life, in habitations, food, and drink, resembles those of the Kirghis. Along with the Torgat, Kalkas, and Khoit, they occupy the country about Lake Koko Nor. See Kalkas.

ELYMAIS, according to De Bode, the modern Tengi-Saulek in the province of Pars. The name, according to Professor Max Müller, has been derived from Ailama, a supposed corruption of Airyama. The Persians, Medians, Bactrians, and Sogdians all spoke, so late as the time of Strabo, nearly the same language, and claimed for themselves one common name, in opposition to the hostile tribes of Turan. And when, after years of foreign invasion and occupation, Persia rose again under the sceptre of the Sassanians to be a national kingdom, we find the new national kings the worshippers of Masdanes, calling themselves, in the inscriptions deciphered by De Lacy, 'Kings of the Aryan and Anarian races;' in Pehlevi, *Iran va Aniran;* in Greek, Ἀριάνων καὶ Ἀνταριάνων. Colonel Chesney says that Elymais or Sosirate was the capital of the province from which the hardy Cossæi spread their conquests over Susiana and the districts eastward. The Elymæans inhabited Mount Zagros, which is on the southern confines of Media, and overhangs Babylon and Susiana.—*Chesney; Max Muller's Lectures*, p. 226; *De Bode.* See Luristan.

ELYTRA, or wing-sheaths, of several of the beetles of India are highly lustrous, and are articles of trade. See Beetle; Insects.

EMBELIA, a genus of plants of the natural order Myrsinaceæ. E. basæal, nutans, ribes, robusta, and villosa are known. The leaves and berries of E. basæal of the W. coast of India are used in medicine (Roxb. i. 587). E. pentandra, Ambut, Dukh., is a scandent shrub with alternate polished leaves; flowers in the cold season; fruit red; size of a currant.—*Riddell.*

EMBELIA RIBES. *Burm.*

E. glandulifera, *Roxb.*	E. ribesoides, *Linn.*
Babi rung, Bai-barung, Ben.	Visha-al, . . Maleal.
Kar-kunni of . Bombay.	Vishal, Vellal, . . Tam.
Wai-warung, . . Hind.	Vayu velangam, . . Tel.

A scandent shrub growing in the Peninsula of India and at Sylhet. Its berries are pungent, and used to adulterate black pepper. They are stated to be anthelmintic and cathartic.—*Roxb.* i. 586.

EMBERIZINÆ, a sub-family of birds of the family Fringillidæ. They comprise the genera Emberiza, Euspiza, and Melophus, the buntings, ortolans, corn buntings, and crested buntings. Three or four visit India during the winter.

Emberiza pithyornis, *Pallas*, white-crowned bunting.

E. cia, *Linn.*, white-browed bunting of S. Europe, is common in the W. Himalaya.

E. pusilla, plentiful in Sikkim, has occasionally been observed in Europe, even so far west as Leyden.

E. fucata of N. Asia, Japan, and common in the W. Himalaya, occurs sometimes in considerable numbers in Lower Bengal.

E. melanocephala of S. Europe is common in parts of India.

E. miliaria, the common bunting of Europe, W. Asia, Arabia (Schlegel), Barbary.

E. citrinella is the yellow bunting of Europe, to beyond the polar circle; and is replaced in the W. Himalaya by E. pithyornis, an inhabitant also of Siberia, which occurs rarely in W. Europe.—*Blyth.*

EMBLICA OFFICINALIS. *Gærtn.*

Phyllanthus emblica, *Linn.*	Myrobalanus emblica, *B.*
Aonla, Anola, . . BENG.	Kadondong, . . MALAY.
Nilika-mara, . . CAN.	Nelli, ... MALEAL.
Emblic myrobalan, ENG.	Ambla, Amla, . . PANJ.
Μυροβαλανος ἐμβλικα, GR.	Umriti, Amalaca, SANSK.
Amliki, Amlika, . HIND.	Amusada nelli, . SINGH.
Aruli, Aungra, . . ,,	Nelli, ... TAM.
Malaca, . . . MALAY.	Usirika, Amla kamu, TEL.

A crooked tree, almost the thickness of a man's body. It grows in Ceylon, in the south of the Peninsula, in Canara, the Southern Mahratta country, the Konkan, the Dekhan, in the forests of the Godavery and Circars, in Bengal, on the banks of the Jumna, the Panjab, all over the forests of Kamaon, in the outer Himalaya, and eastwards in the Moluccas. The wood is hard and durable, is used for boxes, and for veneering. Is good for well rings, does not decay under water, and is well adapted for turning. The strongly astringent bark is used as a tanning material, and in dysentery and diarrhœa. The myrobalan fruit can be pickled or preserved in sugar. Native women consider the powder of the seeds to possess cooling properties, and to be good for the hair, and use it mixed with either water or milk. The fruit is also used for making ink, and to obtain a black dye.—*Beddome; Mr. Rohde; Cleg. Rept.; O'Sh.; Stewart; Honigberger.*

EMBROIDERY.

Tatriz, ... ARAB.	Chikandozi, . . . HIND.
Broderie, ... FR.	Chikankari, . . . ,,
Stickerei, ... GER.	Ricamatura, ... IT.
Kashida Zardozi, . HIND.	Bordado, ... SP.

The art of embroidery is one consonant with the habits of the people of India; their patience and delicate handling render success certain, and there is scarcely a town or city where creditable embroidery cannot be found. The oriental races have ever been celebrated for their skill in the art of embroidery, which appears to have been practised in Assyria, and introduced from thence into India. Pliny, however, mentions that it was a Phrygian invention, and in Rome embroiderers were called Phrygiones. The art of embroidery was known and practised with great skill in ancient times, in Egypt, Assyria, and Persia. The Israelites learnt the art before their exodus; the Babylonians were famed for their rich tapestries, and the Assyrian monuments display richly embroidered robes and trappings. In Babylon, clothes were woven of different colours, and called Babylonica. During the early part of the middle ages, Europe obtained its most important embroideries from Greece and the East. In the present day, the embroidery of Kashmir, Lahore, and Dehli is the most beautiful. Sindi embroidery has a character of its own, and is easily recognisable. In India, embroidery is done on muslin, silk, velvet, merino, or cloth, in gold or silver thread, in a variety of styles, and very elegant and ingenious designs, on shawls, scarfs, jackets, bottle-stands, tablecloths, tablecovers, footstools, chess cloths, cushions for chairs, mats, bags, slippers, dresses of women, aprons, parasols, and book-covers. In the embroidered fabrics of India, it may be mentioned, as a principle, that their patterns and colours diversify plane surfaces without destroying or disturbing the impression of flatness. They are remarkable for the rich diversion shown in the patterns, the beauty, distinctness, and variety of the forms, and the harmonious blending of several colours. Embroidery in gold and silver is an art which furnishes some of the most gorgeous and expensive manufactures for which India has been long celebrated. In the taste and judgment evinced in the blending of brilliant colours, and contrasting them with gold and silver on grounds of velvet, satin, silk, or muslin, India in this manufacture stands unrivalled. Some are very gorgeous shamianahs and elephant saddle-cloths. The gold and silver fancy fringes of Hyderabad are deserving of mention. Small samples of solid silver wire fringes and ornaments from Madura were deemed worthy of notice, but they are surpassed by the silver thread of Hyderabad. The embroiderers of India, though bringing into use, especially on her thinner textiles, a great deal of tinsel, the articles do not look tinselly, and the tasteful application of foil, tinted in various colours, often lends great beauty. Long deep borders and large centres embroidered in gold and silver are wrought with much skill, and the admirable contrasts made by the mingling of silver with gold, as well as the happy way in which the dispersing is managed, is well worth the attention of European embroiderers. The artistic judgment with which the golden embroidery is tastefully encircled by finely executed scrolls done in silver, while the bright scarlet flowers lend and receive back brilliancy from the golden ground out of which they are made to sprout, as well as the admirable dispersing itself of the gold, ask for, and ought to win, the notice of Europe.

Dehli is a great place for embroidered fabrics, both in silk and gold threads. In Lahore and Amritsar, the manufacture of kalabatun, or gold thread, is extensively carried on. And Benares has long been famed for gold and silver threads, and also for its beautiful brocades.

'From Dacca,' says the Abbé de Guyon, writing in 1744, as quoted by Dr. Taylor, 'come the finest and best Indian embroideries in gold, silver, or silk, and those embroidered neckcloths and fine muslins which are seen in France.' There has always been a demand for such scarfs for the markets of Bussora and Java. In the present day, they have silks and woollens, muslins and nets, Kashmir shawls, European velvets embroidered with silk or tasar, that is, wild silk of either floss or common twisted silk thread, or with gold and silver thread and wire in great variety. The cloth to be embroidered is stretched out on a horizontal bamboo frame, raised about a couple of feet from the ground, and the figures intended to be worked or embroidered are drawn upon it by designers, who are generally Hindu painters. On woollen cloths, however, the outlines are traced with chalk, and on muslin with pencil, and the body of the design copied from coloured drawings. The embroiderers, seated upon the floor around the frame, ply the needle by pushing it from instead of towards them. In place of scissors they commonly use a piece of glass or chinaware to cut the thread. Among the embroidered articles at the Exhibition of 1851, those from Dacca and from Dehli were probably the best known. In Dehli, small shawls

and scarfs are chiefly embroidered both with floss and twisted silk. In Dacca, both nets and muslins with floss silk of various colours. But Dacca is also famous for its embroidery of muslins with cotton, which is called chikankari or chikandozi. One kind is formed by breaking down the texture of the cloth with the needle, and converting it into open meshes. Dr. Taylor states that Kashida is the name given in Dacca to cloths embroidered with muga silk or coloured cotton thread, and, though generally of a coarse description, gives occupation to a number of the Mahomedan women of Dacca. Though the scarfs of both Dehli and of Dacca are much admired, muslins or nets, worked so as to be suitable for making ball dresses, would probably be in demand, as those which are now sold in Britain for such purposes are very inferior in taste and elegance to the Indian embroidery. The beetle-wing embroidery exhibited in 1851 from Madras was particularly elegant; and the velvet awnings, musnud covers, hookah carpets, and elephant trappings, embroidered with gold and silver, chiefly at Murshidabad and Benares, were admired as well for richness as for the skill with which the groundwork was allowed to relieve the ornaments. The embroidered saddles and saddle-cloths and floor-coverings from Patiala, Multan, and Lahore were of the usual style of what are called the works of that famed valley, and which was conspicuously shown in the dresses, caps, and slippers from Kashmir itself. But that the skill and taste are not confined to one part of India, was also to be seen in the tablecovers from Tatta in Sind, and in the embroidered boots from Khyrpur, which Mr. Digby Wyatt illustrated.

In Southern India this art is practised, chiefly at the towns of Tanjore, Madras, and Secunderabad, on lace, tusseh, silk lace, muslin. The Tanjore and Madras works are very superior in quality, and consist of a variety of fancy articles, particularly pocket-handkerchiefs, worked muslin dresses, scarfs, which show great taste in the patterns and beautiful finish.

The Chinese are famous for their skill in silk embroidery, and in Canton are shops for its sale. Buddhist nuns largely embroider silk. The skill of the Chinese, says Mr. Williams (Middle Kingdom, ii. p. 123), in embroidery is well known, and the demand for such work to adorn the dresses of officers and ladies of every rank, for embellishing purses, shoes, caps, fans, and other appendages of the dress of both sexes, and in working shawls, tablecovers, etc., for exportation, furnishes employment to numbers of men and women. The frame is placed on pivots, and the pattern is marked out upon the plain surface. All the work is done by the needle, without any aid from machinery. There are many styles of work, with thread, braid, or floss, and in one of the most elegant the design appears the same on both sides, the ends of the threads being neatly concealed. This mode of embroidery seems also to have been known among the Hebrews, from the expression in Deborah's song (Judges v. 30), 'of divers colours of needlework on both sides,' which Sisera's mother vainly looked for him to bring home as spoil. In China, books are prepared for the use of embroiderers, containing patterns for them to imitate. The silk used in this art is of the finest kind and colours; gold and silver thread is occasionally added to impart a lustre to the figures on caps, purses, and ladies' shoes. A branch of the embroiderer's art consists in the formation of tassels and twisted cords for sedans, lanterns, etc., and in the knobs or corded buttons worn on the winter caps, made of cord intertwisted into the shape of a ball. Spangles are made from brass leaves, by cutting out a small ring by means of a double-edged stamp, which at one drive detaches from the sheet a wheel-shaped disc; these are flattened by a single stroke of the hammer upon an anvil, leaving a minute hole in the centre. Another way of making them is to bend a copper wire into a circle and flatten it. The needles are very slender, but of good metal. In sewing, the tailor holds it between the forefinger and thumb, pressing against the thimble on the thumb, to push it into the cloth.—*J. B. Waring, Masterpieces of Industrial Art, Exh. of* 1862; *Williams' Middle Kingdom*, ii. p. 123; *Royle, Arts of India, etc.*, pp. 506, 507; *Rev. Canon Royle.*

EMBRYOPTERIS GLUTINIFERA. *Roxb.*

Diospyros glutinosa, *Koen.*	*D. embryopteris, Pers.*
Gab, . . . ENG., HIND.	Pani-jika, . . . MALEAL.
Kusharatha mara, . . CAN.	Timberri, . . . SINGH.
Cusharatha mara, . ,,	Tumbika, ... TAM.
Pi-tsz, Tsih-tsz, . CHIN.	Pani-chika, . . . ,,
Wild mangosteen, . ENG.	Tumei, Tumika, . TEL.

In the northern province of Ceylon, its timber is used for common house buildings, and the juice of the fruit is used to rub over fishing lines for the purpose of hardening and preserving them; also for paying the bottoms of boats. A cubic foots weighs 45 pounds, and it is esteemed to last 20 years.—*Mr. Mendis; Dr. Cleghorn.*

EMERALD.

Zamurrud, . ARAB., PERS.	Punna, ... HIND.
Emeraude, ... FR.	Smeraldo, ... IT.
Smaragd, ... GER.	Permataoju, . . MALEAL.
Ismaragdon, . . . GR.	Esmeralda, ... SP.
Smaragdus, . GR., LAT.	Patchee kallu, . . TAM.
Nophec, ... HEB.	Patsa rai, . . . TEL.

This precious stone is mentioned in Exodus xxviii. 18; in Tobit, Judith, Ecclesiastes, and Ezekiel. The famous emerald mines in Jabl Zabarah in Egypt—the Samaragdus Mons of the ancients—were worked 1650 B.C., in the time of the great Sesostris II., and by extensive galleries. They were again worked in the early part of the reign of Muhammad Ali, and about 1876 a British company undertook them. The mines (Bunsen's Egypt, ii. p. 303) were on the Kosseir road from Koptos to Aennum (Philoteras).

It is the rarest of all gems, of a beautiful green colour, unsurpassed by any gem. When of a deep rich grass-green colour, clear and free from flaws, it sells at from £20 to £40 the carat, those of lighter shade from 5s. to £15 the carat. The finest occur in a limestone rock at Muzo, in New Granada, near Santa Fé de Bogota, 5° 28′, at Odontchelong in Siberia, and near Ava.

From ancient times many stones have been famed as emeralds, which can only have been jasper or other green mineral, such as the emerald pillars in the temple of Hercules at Tyre, the emerald sent from Babylon as a present to a king of Egypt, four cubits in length and three in breadth, and the emerald obelisk described by Herodotus, were all doubtless green jasper. The book of Esther describes the hall of king Ahasuerus as paved with emeralds. De Carne mentions (p. 125) an emerald statue of Buddha, a cubit in height,

valued at £40,000, now in the pagoda of the king of Siam. It was carried off in 1777 from a pagoda in the city of Vien-chan in Upper Laos. In the United States very large beryls have been obtained, but seldom transparent crystals; they occur in granite or gneiss. One in the imperial collection of Russia measures 4½ inches in length and 12 in breadth. Another is 7 inches long and 4 broad, and weighs 6 pounds. Mr. Powell had seen a flat tablet of emerald, full of flaws, but otherwise of good colour, nearly 2½ inches square, worn as an amulet, and engraved all over. The maharaja of Kapurthalla possesses a large oblong emerald of this kind, and the maharaja of Patiala has a round emerald of enormous size. A crystal in the cabinet of the Duke of Devonshire measures in its greatest diameter 2⅞ inches nearly; its lesser diameter barely 2 inches; its 3d diameter, 2½ inches; the extreme length of the prism is 2 inches. It contains several flaws, and is therefore only partially fit for jewellery. It has been valued at more than 500 guineas. A more splendid specimen, weighing 6 ounces, belonging to Mr. Hope, cost £500. Aquamarine includes clear beryls of a sea-green, or pale-bluish, or bluish-green tint. Hindus and Mahomedans use them pierced as pendants and in amulets. Many of the stones used as emeralds in India consist of beryl. Prismatic corundum or chrysoberyl, says Dr. Irvine, is found among the Tora hills near Rajmahal on the Bunas, in irregular rolled pieces, small, and generally of a light green colour. These stones are considered by the natives as emeralds, and are called in Panjabi Panna. The most esteemed colours are the Zababi, next the Saidi, said to come from the city Saidi in Egypt; Raihani, new emeralds; Fastiki, old emeralds, that is, such as have completed their 20 years; Salki, Zangari, colour of verdigris; Kirasi and Sabuni.

Most of the emeralds commonly in use in India are smooth, cut and bored like beads; they are always full of flaws.—*Powell*, p. 49; *Tavernier's Tr.* p. 144; *Bunsen's Egypt*, ii. p. 303; *Wellsted's Tr.* ii. p. 323; *Irvine, Med. Top.; Tomlinson.*

EMERY.

Emeri; Emeril, . . Fr.	Nashdak, ... Rus.
Smirgel, ... Ger.	Esmeril, ... Sp.
Smeregio; Smerglio, It.	Zimpara, . . . Turk.
Smiris, ... Lat.	

This substance is greatly used in the arts for grinding and polishing hard minerals and metals. Corundum, emerald, ruby, topaz, sapphire, and emery are only surpassed in hardness by the diamond. Emery is regarded as granular or amorphous corundum, coloured with iron, and is not known to occur in India, where corundum and garnets are used by the people in its place. It was, however, sent to the Exhibition of 1862, from Monghir; and Callastry, near Madras, is also named as a site, also Ongole. In the mixed corundums of Greece and Turkey the iron seems equally diffused through the mass, imparting to it a bluish-grey colour; but in specimens which reached the Madras Museum from Southern India, the corundum and ore of iron, though occurring together, are not mixed, but remain apart, segregated, the corundum forming one side of a mineral, and the oxide of iron, in a lump or lumps, on the other side; and all such masses are magnetic, and possess polarity. In the arts, that of Naxos is preferred, as it is more uniform in its quality than that from Pulah and Gumuch. That from Naxos is of a dark grey colour, with a mottled surface, and with small points of a micaceous mineral disseminated in the mass. It frequently contains bluish specks or streaks, which are easily recognised as being pure corundum. When reduced to powder, it varies in colour from dark grey to black, but the colour of its powder affords no indication of its commercial value. The powder of emery examined under the microscope shows the distinct existence of the two minerals, corundum and oxide of iron. The specific gravity of emery is about 4, but its hardness is its most important property in its application to the arts. The only difference in corundum seems to be the absence of oxide of iron. There could be no difficulty in preparing corundum powders of the requisite degrees of fineness. The selling price of corundum in London has ranged from £10 to £25 a ton. There seems no reason why the picked corundums should sell for less than the finest emeries; and Captain Newbold mentions that the corundums near Gram, when sorted into the three sorts known in commerce, viz. the red, the whites, and the scraps, of these two are sold to the Arab merchants at Mangalore and Tellicherry at prices from 12 to 15 or 30 rupees the candy, equal to £4, £6, and £12 a ton.—*Madras Museum Report.* See Corundum.

EMIGRATION from British India and China is in a large and gradually increasing rate. From 250,000 to 350,000 of the Tanjore, Trichinopoly, Tinnevelly, and Madura districts, find employment every year in Ceylon. In the ten years 1872 to 1881 inclusive, 188,712 embarked from Calcutta, Madras, and French ports for the British, French, and Dutch colonies.

EMILIA SONCHIFOLIA. *D. C.*

Emilia purpurea, *Cass.*	Crassocephalum son., *Less.*
Cacalia sonchifolia, *Linn.*	Senecio sonchifolia, *Mœnch.*
Sadi modi, . . . Beng.	Muel shevi, . Maleal.

In Southern Asia it is used in medicine. In China its leaves are used as salad.

EMODUS and Imaus or Himaus are surmised by Rennell (p. 125) to be different readings of the same name, derived from the Sanskrit Himah, signifying snowy, a name borne by the great mountain range of the Himalaya.

EMPAGUSIA FLAVESCENS. *Gray.*

Monitor flavescens, *Gray.*	Varanus Piquotii, *Dum. and Bib.*
M. exanthematicus, *var.* Indicus, *Schlegel.*	V. Russelii, *Schlegel.*
Indian empagusia, Eng.	Kabara, ... Singh.

The colour of this reptile is olive, with yellowish cross-bands. Head-shields sub-equal; eyebrows with a central series of larger plates. It is found in Nepal.

EMU, Emeu, or Emew, the Dromaius Novæ Hollandiæ of Australia, is generally dispersed over the whole interior of the continent. They are strictly monogamous. The whole duties of incubation, as well as the care of the young bird when hatched, devolve upon the male bird. This is believed to be the case with all other struthious birds.

EMYDIDÆ, a family of reptiles. See Reptiles; Tortoises; Turtle.

ENAM. Hind., Pers. Grants or gifts, generally of land, and commonly in perpetuity, for charitable purposes. A jaghir is usually an assignment of lands for service, or as a pension. Altumgha is

an estate in perpetuity for service, or free, as expressed in the deed.—*Malcolm's India*, ii. p. 62. See Inam.

ENAMEL.

Mina, ...	Arab.	Mina-kar, . . .	Hind.
Email.	Fr.	Smalto, ...	It.
Schmelz, ...	Ger.	Esmalto, ...	Sp.

An enamel in the arts is an artificial vitreous mass, the same as a paste, ground fine, then mixed with gum water, and applied by a brush, and fixed by fusion. The art of fixing colours by melting in fire, says Dr. Royle (Arts of India, p. 475), is of very ancient date. It was practised by the Egyptians, and carried to a high degree of perfection in Persia. The art is known in every part of India, and some exquisite specimens were sent to the Exhibition of 1851 both from Central and from North-Western India. It is chiefly employed in ornamenting arms and jewellery, not only in gold, but also in silver. In general, in India, ten parts of lead and three parts of tin are oxidized by continued heat and exposure to air. To the mixed oxides add ten parts of powdered quartz, and ten parts of common salt, and melt in crucibles. Thus is obtained a white enamel, and the basis of coloured enamel, metallic oxides being added. Oxide of lead or of antimony produces a yellow enamel; reds are obtained by a mixture of the oxides of gold and iron. Oxides of copper, cobalt, and iron give greens, violets, and blues, and a variety of intermediate colours by mixtures. The workmen of Behar are stated to make two enamels, which are applied to the surface of some of the rings. One is yellow. Five parts of lead are melted in a shallow crucible, and to these is added one part of tin, and the alloy is calcined for four or five hours. It is then heated to redness in the crucible of the glass furnace. One part of white quartz is next added, and the mass stirred about for three hours. It is then taken out with a ladle, poured out on a smooth stone or iron, and cooled in water. They then take one part of their palest green glass, and add a fourth part of the other materials, to make the yellow enamel. The green enamel is made in the same manner; and to the melted glass is added, not only the prepared lead and tin, but a small portion of the black oxide of copper. In Mysore they make a bright yellow enamel, by first calcining five parts of lead and one of tin, then adding one part of zinc, calcined in a separate crucible. When these begin to adhere, they are powdered in a mortar. When the maker of glass rings is at work, he melts some of this powder, and, while the ring is hot, with an iron rod applies some of it in powder to the surface of the glass.

The finest enamelled work of India is produced at Jeypore, and is considered of great artistic merit. The enamellers there came originally from Lahore. Their enamel is a kind of glass made in earthen vessels, and when fused, the colouring matters are added; the whole is then allowed to cool, and in this state is kept for use. Only pure silver or gold articles are enamelled. From the silver the enamel may come off in course of time, but it never does from the gold. All good enamel is consequently only applied to gold, which must be free from alloy, or otherwise it would tarnish by contact with the enamel in the great heat to which it is subsequently exposed. The gold is first carved of the required pattern; the enamel, having been ground to an impalpable powder, and made into a paste with water, is then placed on the exact spot required by the pattern. The article is then strongly heated, much skill being required to take it out at the precise moment when the enamel is thoroughly fused, but before the colours begin to run into one another. As soon as removed, the workmen then exert the full power of their lungs in blowing upon it as quickly and as violently as possible. The hardest colours are first placed in the furnace and fused, and then those which melt more easily. Afterwards, the whole is ground and polished. The translucent enamels for which Jeypore is famed, are enamel colours on gold or gold leaf, which gives light and brilliancy to the colours. Lord and Lady Mayo exhibited from Jeypore a cup, saucer, and spoon made in fine gold, and designed in most elegant forms. Each of these forms was heightened and defined by enrichment made by incisions into the metal in beautiful conventional ornament, subsequently filled in with transparent and opaque enamel pastes, but principally the former, the dominant parts and mouldings being heightened yet further by setting in diamonds in various ornamental forms. The result was a specimen of goldsmith's work as lovely (although, of course, in a very different style) as anything Celline or Caradosso ever did. Artisans form a small family, and the real process of enamelling is kept by them as a secret, which descends from father to son like an heirloom.

The Panjab is famed for its blue and green enamels. It is said that Kashmir has long served as a great field for artists emigrating from Persia; and a careful comparison of Persian with Kashmirian products leads one instinctively to the impression that Kashmir must certainly owe much of her delicate perception of the beauty of colour and floral form to her proximity to, and intercourse with, the time-honoured land of the Sun.

Enamelling, as applied in India to jewellery, consists of an extremely fine pencilling of flowers and fancy designs in a variety of colours, the prevailing ones being white, red, and blue, and is invariably applied to the inner sides of bracelets, armlets, anklets, necklaces, ear-rings, sarpech, tiara, and all that description of native jewellery, the value depending upon the fineness of the work, and often exceeding that of the precious stones themselves. In general the cost is moderate, as the finest specimens are only made to order. The best come from Benares, Dehli, and the Rajputana states. In the south of India, the manufacture of enamels on articles of domestic use like the above is almost entirely restricted to Hyderabad. It presents no varieties, but in general consists of a blue coating interlined with white on a surface of silver, and is applied to rose-water sprinklers, spice-boxes, basins, and such-like articles. The merit of the manufacture lies in the simplicity of the enamel itself, and in the lightness of the silver article to which it is applied. Though pleasing, it is the coarsest enamel produced in India. At Indore in Central India, the manufacture does not constitute a regular trade. It is invariably applied to articles of personal decoration, such as necklaces, armlets, brooches, ear-rings, etc., which are set by native jewellers, according to the taste of the purchaser.

These subjects generally consist in a representation of the avatars, or pictures of the metamorphoses of Indian deities; and the work is so perfect, that it will stand not only the influence of climate, but even rough handling.

The specimens of this kind of work have no fixed market value, and the price is therefore entirely dependent upon the number of competitors that may be in the field when any of them are offered for sale. A set of these ornaments, consisting of a necklace, ear-rings, two armlets, and a brooch, in plain gold, contributed to the Exhibition of 1851, was valued at Rs. 1700, or £170. A duplicate, forwarded to the Paris Exhibition in 1855, was purchased for Rs. 600, or £60.

Enamel ornaments are largely used by Chinese women. It is a fine glass or paste of various colours. The art of enamelling on silver is also brought to great perfection in China, and specimens surpass any ever produced at Genoa.—*Sirr's Chinese*, i. p. 387; *Report of Exhib. of* 1862; *Royle, Arts of India*, p. 475; *Trs. of Hind.* ii. p. 377.

ENCEPHALARTOS, a genus of the Cycadaceæ; their fruits are called Kafir bread. E. Denisonii is of New South Wales.

ENDELU, of Sumatra, yields a fibre from which twine is made.

ENDIVE, Cichorium endiva, used as salad, blanched by the leaves being tied together.

ENG. Burm. In Amherst, a wood used for boat-building. Tree produces oil. It is a strong, heavy, useful, grey wood, suited for beams, piles, and the like. Dipterocarpus grandiflora. Engbeng of Tavoy is a strong wood, used for common carpentry. Eng-gyeng, in Amherst, a timber used for posts of religious buildings. A useful wood, but liable to split. Hopea suava? *Wall.*

ENGELHARDTIA LESCHENAULTII grows well in the plains of the N.W. Provinces, but does not fruit. E. Colebrookiana is found as far north as Jurripani, Garhwal, and Nepal. E. Roxburghiana, in Sylhet and at Chappedong, forms a large tree, the wood of which is valued by turners, and the bark, containing much tannin, is considered the best used by natives for tanning. E. spicata, *Blume*, is the spurious walnut tree of the Himalaya, Darjiling, and eastward to Java. It attains to 200 feet of height. E. Wallichiana is found as far south as Penang and Singapore.—*Mueller; Royle, Ill. Him. Bot.* p. 342; *Wall. Pl. As. Rar.*

EN-GIE or In-gie. Burm. A white linen jacket used as an article of dress by Burmans.

ENGLAND, the southern part of an island on the west of Europe, which, with Ireland, another island on its west, forms the United Kingdom of Great Britain and Ireland, that now rules British India. It is said to have been known to the Aryan Hindus under the name of Sweta-dwipa, or White Island, and is said to be the Sacam of the Puranas.

ENG-RAI-GYI, a lake in Bassim district, Pegu division, British Burma, about 3 miles in circumference, and a depth of from 20 to 45 feet in the centre. It is valuable as a preserve for fish. The lake is dragged by floating capstans worked by hawsers attached to a frame, and occupies three months, working at the rate of about 45 fathoms each day. The fishing begins with the full moon in June, when the temperature of the water has been reduced by the first showers of the monsoon. The number of fish caught is never below 70,000 to 80,000 of all kinds, the principal belonging to species of the genera Circa, Cyprinus, Gobio, Labeo, Cimelodus, Cirrhinus, Cyprinodon, and Silurus. The largest specimens weigh about 56 lbs. each. Crocodiles of all sizes are found in the drag-net, but no casualty has been known to have been caused by them. Some 8000 to 10,000 persons are engaged in the taking and disposal of the fish, of which about 40 tons are annually sold on the spot.—*Imp. Gaz.*

ENGRAULIS ENCRASICOLUS, Anchovy.

Anchois, ... Fr. | Acciughe, ... It.

The anchovies of commerce met with in India are wholly imported. It is a small fish, about 4 inches long, with bluish-brown back, and silvery white on the belly, very abundant in the Mediterranean, where, though occurring in other seas, they are chiefly caught at night by nets, their heads immediately taken off, their entrails removed, and pickled. Another Mediterranean species, E. meletta, is largely substituted for and mixed with the true anchovy. A species is said to occur in the Bay of Bengal, and is one of the fish made into Balachang.

ENKIANTHUS QUINQUEFLORUS, a flowering plant of China, on mountains from 1000 to 2000 feet above the level of the sea, fixing itself in the crevices of the rock, in situations with very little soil. At the Chinese New Year its flowers are in great request in the south of China for the decoration of the houses, boats, and temples, just as those of the Nandian are in the north with camellias, coxcombs, magnolias, and various plants which flower at this season. The enkianthus is brought down from the hills with the buds just expanding, and, after being placed in water for a day or two, the flowers come out healthy and fresh. At New Year's day in Canton, the budding stems of the flowering almond, narcissus, plum, peach, and the Enkianthus reticulatus, or bell-flower, are forced into blossom to exhibit, as indicating good luck in the coming year.—*Fortune's Wanderings; Williams' Middle Kingdom*, p. 283.

ENNORE or Katipak, in lat. 13° 14′ N., long. 80° 21′ 55″ E., 9 miles N. from Madras, a small hamlet on the southern end of the Pulicat Lake, a marine lagoon.

ENTADA PURSÆTHA. *De C.*

E. monostachya, *D.C.*	Mimosa entada, *Linn.*, *R.*
Mimosa scandens, *Linn.*, *R.*	Acacia scandens, *Willde.*
Gila-gacha, . . . Beng.	Pus-wael, . . . Singh.
Gardul of . . Bombay.	Hin-pus-wael, . . ,,
Gradul, ... Dukh.	Maha-pus-wael, . ,,
Parin-kaka-vulli, Maleal.	Gila tiga, . . . Tel.
Kastori-kaman, . Panj.	

An immense climbing shrub, forming elegant festoons, legumes from 1 to 5 feet long and 4 or 5 inches broad, formed of a series of joints, each containing one seed. They are roasted and eaten; enter into the native Materia Medica as an anti-febrifuge; are emetic, and used to wash the hair. Its gigantic pods excite astonishment in passing through the forests. Its seeds are made into boxes.—*Cat. Ex.* 1862; *Tennant; Riddell; Mason.*

ENTOMOLOGY. See Insects.

ENTOMOSTOMATA of De Blainville, a family of molluscs, in which are included the genera cerithium, planaxis, subula, terebra, eburnea, buccinum, nassa, harpa, dolium, oniscia, ricinula, cancellaria, and purpura. See Mollusca.

EOLUS. The chronicles of Eri describe Eolus as the chief of a Scythian tribe, who lived about 40 years after Moses, *i.e.* 1368 to 1335 before Christ. He composed the chronicles of Eolus with the ancient traditions of his tribe.

EOS RUBRA, a brush-tongued parrakeet of Amboyna, of a vivid crimson colour; the red lori. —*Wall.* i. p. 297.

EPEIRA, a great spider, found by Captain Sherwill 1100 feet high, on the summit of Maruk, south of Monghir. Some of the webs, including the guy ropes, were from 10 to 12 feet in diameter, the reticulated portions being about 5 feet, in the centre of which the spider, of a formidable size and very active, sits waiting for prey. In one web was found entangled a bird about the size of a field lark, and eight young spiders feeding on the body. It was near the centre of the web, and its wings had been completely pinioned by the entwined web. The old spider sat about a foot above the bird. It was 6 inches across the legs, and had a formidable pair of mandibles.—*Goss.; Proc. Ent. Soc.* 1852, p. 239. See Insects.

EPHEDRA, a genus of plants growing in the Himalaya and China. E. alata, *Stewart*, is used for scrubbing metal dishes. E. Gerardiana, *Wall.*, is eaten by goats. E. saxatilis, *Cleghorn*, is a plant of Kaghan.—*Stewart; Cleghorn.*

EPHESUS, a decayed town of Ionia, in Asia Minor, 45 miles south of Smyrna, famous in ancient times for its temple of Diana. Amongst the Mahomedans of the East, its story of the Seven Sleepers is continued, through the Koran. When the emperor Decius persecuted the Christians, seven noble youths concealed themselves in a cavern, which was then blocked up with stones. They immediately fell into a deep slumber, which lasted for 187 years. At last the slaves of Adolius removed some of the stones for building materials, on which the Seven Sleepers were aroused, and despatched Jamblichus, one of their number, to the city to procure food; but the altered appearance of Ephesus, the age of the coin he presented to the baker, and his long beard, led to a discovery of the marvellous adventure. The bishop of Ephesus, the clergy and magistrates, visited the cavern, and, after conversing with the somnambulists, they quietly expired. James, a Syrian bishop of the 5th century, devotes a homily to its praise; and the Seven Sleepers are found in the Roman, Abyssinian, and Russian calendars. Mahomed introduced the tale in his Koran, as the Companions of the Cave, and says God caused them to turn over occasionally from right to left. —*Milner's Seven Churches of Asia*, p. 171; *Sale's Koran*, p. 219. See Decius.

EPICARPUS ORIENTALIS. *Blume.*

Trophis aspera, *Willde.*

Sheora, ...	Beng.	Tinda parua, .	Maleal.
Nak chilni, . . .	Dukh.	Pirahi, ...	Tam.
Siura, ...	Hind.	Pukki, ...	Tel.

A fibre is obtained from the stem. Used as a tooth-brush by the natives.

EPICHARMUS, with Plato and others, adopted a philosophy similar to that of the Vedanta, a system of perceptions of primary or secondary qualities.

EPIMACHUS MAGNUS, a bird of the coasts of New Guinea, Upupa magna, *Gm.*, and U. superba, *Lath.* Its tail is 3 feet long, and its head feathers are lustrous steel-blue. See Birds.

EPIODORUS, according to the Periplus, an island, the seat of the pearl fishery; it is the modern Manaar.

EPIPHYTES are plants growing upon other vegetables, adhering to their bark, and rooting among the scanty soil that occupies their surface, in which respect they are distinguished from parasitical plants, which, like mistletoe and the various species of Loranthus, strike their abortive roots into the wood, and flourish upon the juices of the individual to which they attach themselves. Orchidaceous epiphytes grow upon trees in the recesses of tropical forests; and Dr. Wallich found them growing equally well in Nepal upon trees and stones, provided the latter had a certain quantity of mould and moss adhering to them. In the Malay Archipelago, the mean temperature of which is estimated at between 77° and 78°, and is very damp, they are found in profusion; while on the continent of India they are almost unknown, their place being occupied by parasitical Loranthi. At the estuaries, however, of the Ganges, the Brahmaputra, the Irawadi, and the rivers of Martaban, they exist in vast quantities, but all these stations are excessively damp. In the Botanic Garden at Calcutta they grow most vigorously during the rainy season, but in the fiercely hot season, which begins in March, and lasts till the 10th of June, they perish, notwithstanding the care they receive.

In Nepal, orchidaceous epiphytes grow in company with ferns, and the thicker the forest, the more stately the trees, the richer and blacker the natural soil, the more profuse the orchidaceæ and ferns upon them. There they flourish by the sides of dripping springs, in deep shady recesses, in inconceivable quantity, and with an astonishing degree of luxuriance.

Reinwardt speaks of great quantities of orchidaceæ in the storax and laurel woods of Java, growing along with nepenthes, rhododendrons, magnolias, and oaks, in a zone of vegetation whose lower limit is 3000 feet above the sea. Dendrobium nobile, Renanthera coccinea, and some others, bear the periodical cold of Canton, where it occasionally freezes. Dendrobium catenatum and D. moniliforme occur in Japan as far north as 37° or 38°, or the parallel of Lisbon, and are periodically subject to a very low temperature; and Dr. Royle met with the deciduous Coelogynes and Dendrobium alpestre on the Himalaya mountains, at the height of 7500 feet, where snow sometimes lies in winter for a week or more.

EQUIDÆ, a family of mammals, in which the Asinus or ass, Hippotigris or zebras, and Equus, the horse, are the only genera, with the mule breed between. The horse does not occur in a wild state in India, and will be noticed under 'Horse.'

Equus onager, *Pallas, Blyth, F. Cuv.*

E. hemionus, *Auct.*		Asinus Indicus, *Sclater.*	
Wild ass of . .	Cutch.	Koulan, . . .	Kerghiz.
Gor-khar, . . .	Hind.	Ghour, ...	Pers.

The wild ass of Cutch, Gujerat, Jeysulmir, and Bikanir is not found south of Deesa, nor east of lat. 75° E. It also occurs in Sind, and to the west of the Indus in Baluchistan, extending into Persia and Turkestan, as far north as lat. 48° N. They foal in June, July, and August. They are shy, and difficult to approach. The voice is a shrieking bray.

Equus hemippus, *Is. Geoffroy*, inhabits the countries to the west of E. onager, viz. Syria, Mesopotamia, North Arabia, etc. The voice is like the bray of the common ass. This is considered by Blyth to have been the hemionus of the ancients.

Asinus tæniopus, *Heuglin*, onager of the ancients; Equus asinus, wild ass. This species occurs wild in N.E. Africa and South Arabia.

Equus hemionus, *Pallas*, the kiang or dzightai of Tibet and Central Asia, is met with across the snowy Himalaya, in Ladakh, and other parts. It is much darker in hue than the Gor Khar or E. onager, *Pallas*, *Blyth*, *F. Cuv.*, the upper parts being of a dull ruddy brown.

The zebras and quaggas, genus Hippotigris, are of Africa. The horse has been found fossil in Ava.—*Cat. Mus. Ind. Ho.*; *Jerdon*, pp. 236–9. See Horse.

EQUISETUM HYEMALE. *Smith.* Muh-tsih, CHIN. This species of the horse-tail tribe of plants grows to a considerable height in marshy places in Kan-suh and Shen-si, and with E. arvense is used to polish wood. A large quantity of silex, arranged in a beautifully regular manner in the cuticular structure, confers this property E. debile, *Roxb.*, is a plant of India and Burma.

ERA. See Chronology.

ERAGROSTIS, panicum, pennisetum, poa, rotbellia, saccharum, vilfa, are the grasses of the Doab. Several species of Eragrostis grow in the Panjab, where they are called chinka, kuri, lamb, and mirukar, and are considered good pasture grasses.

ERAN, a village of a tract of the same name in the Sagar (Saugor) district, Central Provinces, 48 miles west of Sagar town, in lat. 24° 5′ 30″ N., long. 78° 15′ E., population (1870) 446; its monumental remains are attributed to Raja Bahrat. The chief of these is a rudely-shaped image of Vishnu in his boar avatar. The tip of the projecting tongue supports a human figure erect. The breast bears an inscription, and, as at Oodehghir (Odaigarh), a young female hangs by the arm from the right tusk. On one side of Vishnu stands a four-armed deity, above 12 feet in height, with girt loins, a high cap, and round his neck and reaching to his feet a thick ornamental cord. On the columns before this statue are seen figures weaving the sacred thread, with twisted snakes, elephants, nude female figures, seated Buddhas, faces of satyrs, and other devices. Besides these and other remains, there are three figures of crouching lions.—*Imp. Gaz.*

ERANDI. HIND. The castor-oil plant, Ricinus communis. The small plant is called Choti erandi; the larger, Barri erandi. It is the name of a tasar silk-moth, so called because it feeds on the castor-oil leaves.

ERANNOBOAS, the same with the river Sone or Heranya. See Pataliputra-baha.

ERECH of Scripture, the modern Warka, near the Euphrates. It was founded under the second ruling dynasty, of the date B.C. 2286. See Kesra.

EREMURUS SPECTABILIS. *Bieb.*

Brc, Prau, BENG., CHENAB. | Shili, ... JHELUM.

This magnificent plant grows in the Panjab to 5 or 6 feet high, with close spikes of white flowers to half that length. It is common at places on the Upper Chenab and in the Jhelum basin, at from 6000 to 9000 feet. The leaves when young are much eaten, both fresh and dry, cooked as a vegetable, and are excellent treated as spinach.—*Stewart.*

ERI, as in the Madras suburb Vepery, means a tank, a large reservoir or piece of water. It is a Tamil word, sometimes a prefix, sometimes a suffix; Vepery means the Vepa tree (Azadirachta) on the tank.

ERIA. HIND. A silk fabric used in Assam, manufactured from the cocoon of a wild moth. In Assam each householder reels, spins, and weaves his own cloth, and the holiday attire of the Assamese is usually of silk. In Durrung, a than of good silk, measuring 10 yards, can be purchased for from 5 to 10 rupees, according to the fineness. The cloth is occasionally coloured, but the Assamese silks are usually of the natural colour as wound from the cocoon.

ERICACEÆ of De Candolle, the heath tribe of plants, comprising the genera Andromeda, Cassiope, Gaultheria, Rhododendron. Gaultheria fragrantissima, *Wall.*, grows in Nepal, and there are several beautiful species of rhododendron in the Himalaya.

ERIGERON, a genus of plants of the order Compositæ; several species occur in India. In Italy large bundles of E. viscosum, *Linn.*, a viscous species, are dipped in milk and suspended in the rooms, to attract the flies.

ERIKA-VADU, the Yerkal race in the Peninsula of India, called also Yera Keddi. See Eruku.

ERINACEIDÆ, the hedgehog family of the mammalia. Species of the genera Erinaceus and Tupaia occur in India and the Archipelago.

ERINOCARPUS NIMMONII. *Grah.*

Chowra, ... CAN.? | Jungli-Bhendi, . HIND.

This middle-sized tree is common on the Konkan ghats; flowers yellow, in terminal panicles, appear in September and October; fruit triangular, covered with bristles; angles somewhat winged; has a pleasing fragrance; bark is used for making ropes.—*Jaffrey*; *Beddome.*

ERINYS of the Hindus has been identified with the Greek Erinnys; the word means the fleet runner.

ERIOBOTRYA JAPONICA. *Lindl.* Loquat.

Mespilus Japonicus, *Thunb.*

Yung-mai, Yang-ma, CHIN. | Kin-ling-tsze, . . CHIN.
Lu-kiuh, Kin-lin-tsze, ,, | P'i-P'a, ... ,,

This small tree of Japan and China has been introduced all over the Dekhan, the Panjab, and also in Bengal, where it is much cultivated on account of its excellent fruit, the beauty of the tree, and the exquisite fragrance of its flowers. In the Botanic Gardens at Calcutta it blossoms twice in the year, but bears fruit only once, viz. in February and March. It also grows in great perfection in New South Wales, and bears fruit twice in the year, and is highly esteemed both for desserts and preserves. The finest fruit is produced at the second crop, at the end of the cold season, and requires protection day and night, from birds in the former, and flying foxes in the latter. The fruit is of a yellow colour, with thin skin, a sweet acid pulp, one or two seeds in the centre, sometimes more. The seeds grow easily, and the fruit appears to be capable of great improvement. In Ajmir it is cultivated in gardens, but does not thrive well. It is very common in China, grown along with peaches, plums, oranges, the Chinese gooseberry, Averrhoa carambola, the wanghee, Cookia punctata, the longan and leechee.—*Rox-*

burgh; Tea Districts, p. 30; *Riddell; Irvine; Voigt; Cleghorn.*

ERIOCAULON CANTONIENSE, the Ku-tsing-tsau of China, is a troublesome weed in gardens and corn-fields. This and E. setaceum are used there in eye diseases, tinea tarsi, and small-pox.—*Smith.*

ERIOCHEIR JAPONICUS, a crab of Manchuria, with a hairy hand. It is of a dark olive hue, freckled and flat-backed. They are eaten.

ERIODENDRON ANFRACTUOSUM. *D. C.*

Bombax pentandrum, *L.*	Gossampinus Rumphii, *Sch. and End.*
Ceiba pentandra, *Gærtn.*	
Shwet shimool, . . Beng.	Paniala, Pania, Maleal.
White cotton tree, Eng.	Pulim, Imbool, . Singh.
Hattian, Safed simal, Hd.	Elavum maram, . . Tam.
Shamieula, . . Mahr.	Pur, Buruga, . . . Tel.

There are six species of this genus of plants; five of them are natives of America, but all are known by the name of wool or cotton trees. They are large trees, with a spongy wood, which is used for little besides making canoes in the districts where they grow. This one only grows in Asia and Africa; it attains a height of 150 feet or more. But there are two varieties described, the one growing in the East Indies, and the other in Guinea, which differ chiefly in the colour of their flowers. The Indian variety, E. (a) Indicum, has flowers yellowish inside and white outside; whilst that of Guinea, E. (b) Africanum, has large crimson flowers. The Guinea tree is one of the largest and tallest of the forest trees, and the trunk is employed for making the largest-sized canoes. This is an elegant tree in Ceylon; it is very common up to an elevation of 2000 feet, and is common on the Coromandel coast. The leaves fall during the cold season, and the blossoms appear in February before the leaves. It grows in many parts of the Dekhan, but is not common on the Bombay side, save in some parts of Kandesh. The trunk is perfectly straight. Its light wood is employed by the toymakers or Muchi race, and is likewise used for making rafts and floats. The seeds are numerous, smooth, black, and enveloped in a very fine soft silky wool. The gum is termed Huttian ka gond, and is given in solution with spices in bowel complaints.—*O'Sh.; Ainslie; Gibson; Wight; Riddell; Cleghorn; Voigt; Thwaites.*

ERIOLÆNA, a genus of plants of the order Sterculiaceæ. Six species are known in India and Burma, E. Candollei, Hookeriana, quinquelocularis, spectabilis, Stocksii, and Wallichii. The heart-wood of Candollei, Hookeriana, and Wallichiana is of a reddish-brown or brick red colour, hard.

ERIOPHORUM CANNABINUM. *Royle.* The cotton grass, or bhabur of Hindustan, grows throughout the Panjab Siwalik tract, and outer hills to 5000 feet; in the Salt Range most of the baggar or bhabar rope appears to be made of Andropogon involutus; but part of the cordage for bedsteads, Persian wheels, etc., is made of this. Its seeds are clothed at their base with a cotton-like substance, with which pillows are stuffed and candle wicks made.—*Royle; Stewart.*

ERIVAN, in lat. 40° 10′ N., long. 44° 30′ E., and 3167 feet above the sea, a town in Russian Armenia, of which it is the capital. It has been repeatedly taken by Turks, Persians, and Russians. From the time of Nadir Shah in 1748, it was in the hands of the Persians till taken by the Russians in 1828. The province of Erivan is watered by a network of canals, by the Karasu, the Zangi, Abaran, and the great Arpa Chai. It contains 508 villages.—*Porter's Travels; MacGregor*, p. 195.

ERMINE.

Sinjab, ... Arab.	Ermellino, ... It.
Hermine, ... Fr.	Gornostai, . . . Rus.
Hermelin, ... Ger.	Armino, ... Sp.

The prepared skin of a weasel, largely used by the wealthy of Europe and China.

ERNAAD, a naad or district on the western side of the Neilgherries.

ERRODE, or French rocks, 5 miles N. of Seringapatam, is a military cantonment. It was a station for a French regiment in the time of Tipu.

ERTHA, the German goddess of the earth, whom Colonel Tod supposes to be the Hindu Ella. The German Ertha had her car drawn by a cow, under which form the Hindus typify the earth (Prithivi).—*Tod's Rajasth.* i. 574. See Eleusis.

ERTOGHRUL, father of Usman, the founder of the Turkish empire. He was the leader of a little band, a fragment of a tribe of Oghuz Turk, which, under Ertoghrul's father, Suliman Shah, had left their settlements in Khorasan, and sojourned for a time in Armenia. After a few years they left this country also, and were following the course of the Euphrates towards Syria, when their leader was accidentally drowned in that river. The great part of the tribe then dispersed; but a little remnant of it followed two of Suliman's sons, Ertoghrul and Dundar, who determined to seek a dwelling-place in Asia Minor, under the Seljuk Turk, Ala-ud-Din, sultan of Iconium. The adversaries, from whose superior force they delivered Ala-ud-Din, were a host of Mongols, the deadliest enemies of the Turk race. Ala-ud-Din, in gratitude for this eminent service, bestowed on Ertoghrul a principality in Asia Minor, near the frontiers of the Bithynian province of the Byzantine emperors. The rich plains of Saguta along the left bank of the river Sakaria, and the higher district on the slopes of the Ermeni mountains, became now the pasture-grounds of the father of Othman. The town of Saguta or Sægut was his also. Here he and the shepherd-warriors who had marched with him from Khorasan and Armenia, dwelt as denizens of the land. Ertoghrul's force of fighting men was largely recruited by the best and bravest of the old inhabitants, who became his subjects; and still more advantageously by numerous volunteers of kindred origin to his own. The Turk race had been extensively spread through Lower Asia long before the time of Ertoghrul. Quitting their primitive abodes on the upper steppes of the Asiatic continent, tribe after tribe of that martial family of nations had poured down upon the rich lands and tempting wealth of the southern and western regions, when the power of the early khalifs had decayed like that of the Greek emperors.

ERU. Hind. Manure.

ERUA BOVII. *Webb.* This and E. Javanica and E. scandens of Jussieu grow up to 3000 and 4000 feet in the N.W. Himalaya. The flowers have a sweet fragrance, and the woolly fruit is used for stuffing pillows.—*Stewart.*

ERUKU, also called Erkal, Yerkalvadu, Erikavadu, and Yerakeddi, a homeless migrating tribe in the Peninsula of India, occupying themselves ostensibly as basketmakers and in fortune-telling.

But they are notoriously predatory, and steal girls, whom they devote to prostitution. They are found in mat huts on the outskirts of towns, in the border districts of the Teling, Tamil, and Canarese countries.

ERULAR, a Dravidian race occupying the skirts of the forests at the base of the Neilgherry Hills. They dwell in the clefts of the mountains, and in the little openings of the woods. They arrange themselves into two clans, the Urali and Kurutalei, meaning rulers and serfs. The word Eruli means unenlightened or barbarous, from the Tamil word Erul, darkness, and is the term applied to them by their neighbours. They speak a rude Tamil dialect. They sacrifice he-goats and cocks to Mahri, their deity, which is a winnowing fan; and they have minor deities, mere stones, that they call Moshani and Konadi Mahri. They inter their dead in great pits, 30 or 40 feet square, thatched over and planked across, with an opening about a cubit square in the centre of the planking. Across this opening are laid pieces of wood, on which the dead are placed, and covered with earth, and are left so till another person die, when the former remains and the earth are turned into the pit, and replaced by the newly dead. They are in small scattered communities, practising a rude system of agriculture, which scarcely furnishes them with sufficient food. They make use of animal food of every description, even vermin and reptiles. They collect the jungle produce. They hunt and take game of every description, with great cunning and expertness. The other Neilgherry Hill tribes do not recognise the Erular as inhabitants of the Blue Mountains, and do not hold much converse with them. The following is the result of the weight and measurements of an average of 25 men, age 26·68 years:—

Height,	61·78 in.	Hands,	0·50 in.
Head circumf.,	19·83 ,,	Breadth of hands,	3·25 ,,
Neck ,,	11·59 ,,	Length of legs,	34·50 ,,
Chest ,,	29·91 ,,	Feet,	9·0 ,,
Arms,	8·42 ,,	Breadth of feet,	3·25 ,,
Thighs,	15·17 ,,	Weight (avoir.),	96·20 lbs.
Length of arms,	30·0 ,,		

They are superior in physique to the Kurumbar, and in some respects even to that of the Kotar. They do not recognise the Toda as lords, nor do they pay them goodoo. The women are strong and stoutly built, and very dark skinned. Their feet, of all the S. Indian races, are the most beautifully formed. They wear heaps of red and white beads about their necks, thin wire bracelets and armlets, with ear and nose rings. The women wear a double fold of a wrapper cloth, which extends from the waist to the knees; the upper part of their bodies, with their bosoms, are nude. At one time the Erular rarely held communication with the other natives, living isolated lives in secluded places and unhealthy localities, and eking out a precarious existence. Their villages were small, seldom exceeding five or six huts, and cattle pens scattered far apart, mostly located in groves of plantain and other fruit trees, and built somewhat after the Kurumbar huts, surrounded by the usual filth and dirt. They are more numerous in the southern than in the eastern parts. But of late years they have improved wonderfully, by mixing with others and taking employ as coolies on plantations, and working side by side with other natives. They give satisfaction to their employers.—*Dr. Shortt, F.G.S.*

ERVUM HIRSUTUM. *Willde.* Lentil.

Jhunjhunian-kari, HIND. | Masuri, Massur chenna, PANJ.

This is found in the Sutlej valley, between Rampur and Sungnam, at an elevation of 5000 feet, grows in corn-fields in Northern India, and is cultivated for fodder.—*Cleghorn.*

ERVUM LENS. *Linn.* The lentil.

Adas, Adz, . . . ARAB. | Massur parupu, . TAM.
Massur, Mauri, GUJ., HD. | Chiri sanagalu, . TEL.
Masura, . . . SANSK.

This pulse is grown all over India, and is eaten as a dal in food, but is said to be heating, and to cause eruptions if too much indulged in. By a slight change, Ervum lens became the Ervalenta; and another person, with another little change, sold the same article as Revalenta, adding the term Arabica to denote its Asiatic origin. Its flour is now used all over England by all classes to make a good wholesome soup without meat, though meat, soup, and vegetables can be added. The knowledge of this has rapidly spread.—*Stewart; Hassall.*

ERYNGIUM CAMPESTRE of Europe grows in Kābul and Kashmir. E. giganteum and E. Perowskianum are ornamental garden plants, and E. planum grows in Kashmir.—*Stewart; Honigb.; Riddell.*

ERYSIMUM PERFOLIATUM is cultivated in Japan for its oil-seeds.—*O'Sh.* p. 187.

ERYSIPHE TAURICA is one of the fungi of the Himalaya.

ERYTHRAS, son of Ariarius, a satrap of Phrygia. Erythras was banished by Darius to Kishm island, and Nearchus was told that Erythras had given his name to the adjoining sea.

ERYTHREAN SEA (Pliny, lib. vi. caps. xxxiii. and xxxiv.) was applied to the Indian Ocean, as well as to the two gulfs which it forms on each side of Arabia. Herodotus includes the Arabian Sea and part of the Indian Ocean under the general name of Red or Erythrean. And Pliny styles the Persian Gulf 'a bay of the Red Sea.' Greek and Roman authors, however, generally used the term Persian Gulf; but it appears also among them as the Babylonian Sea and the Erythrean Sea, and this has caused a confusion with the Red Sea. The Persian Gulf by many is described as the Green Sea, also in Eastern manuscripts as the Sea of Fars or Pars, of Oman, of Kirman, of Katis, of Basrah, deriving these and other names from the adjoining provinces and remarkable places on its Arabian and Persian coasts. See Red Sea.

ERYTHRINA, a genus of tropical trees and tuberous herbs, with clusters of very large, long flowers, which are usually of the brightest red, whence their name of coral trees. Moore, when describing the Indian islands, notices the

> 'Gay, sparkling loories, such as gleam between
> The crimson flowers of the coral tree,
> In the warm isles of India's sunny sea.'

Frequently their stems are defended by stiff prickles. Voigt notices 11 and Gamble 8 species as known in India.—*Voigt*, p. 237.

ERYTHRINA ARBORESCENS. *Roxb.*

Pariala, ... BEAS. | Gul nashtar, . . PANJ.
Thab, ... CHENAB. | Gileru, Gaderwa, . RAVI.
Gul nasar, . . . PANJ. | Pudara, . . . SUTLEJ.

Grows up to 7000 feet in the Outer Himalaya,

from the Ganges and Bhutan, also in the Khassya Hills; wood spongy.

ERYTHRINA INDICA. *Lam.* Coral tree.

Palita mandar, .	BENG.	Furrud, Pangra, .	HIND.
Ka-theet, . . .	BURM.	Mandara, . . .	SANSK.
Moduga vriksha, .	CAN.	Erabadu gass, .	SINGH.
K'oh ping, . . .	CHIN.	Murukka, . . .	TAM.
Man-to-loh, . . .	,,	Badida chettu?. .	TEL.
Moochy-wood tree,	ENG.	Chalo-dhona, .	URIYA?

A large tree of all India and the Archipelago, flowering at the beginning of the hot season, its seeds ripening in June and July. Its place in the forests is generally taken by Erythrina suberosa. It supplies a soft white wood, as easily worked as the pine, commonly used for light boxes, scabbards, children's toys, rafts, fishermen's floats, and is hollowed out and made into canoes. The wood used for this purpose in Upper Hindustan is the Bombax ceiba. This is the Muchi wood of Madras, and the varnished toys from the Northern Circars are made of it. For sword scabbards it is a first-rate material. It is eaten by white ants eagerly. This tree is employed to support the black pepper vine, being of quick growth from cuttings, with firm, permanent, smooth bark, which never peels off, and gives firm hold to the roots of the vine, and they are full of leaves and very shady during the hottest months of the year, which shelters the vine from the intense heat of the sun, and keeps the ground moist. As soon as the hottest weather is over, the leaves drop, and expose the vines to the sun and weather during the cool season.—*Roxb.; Ainslie; Wight; Mason; O'Sh.; Cleghorn; Thw.*

ERYTHRINA OVALIFOLIA. *Roxb.*

Huri kankra, . . BENG. | Yak erra baddu gass, SING.

A tree of the hot, drier parts of Ceylon, and grows in Bengal.—*Roxb.; Voigt; Thw.*

ERYTHRINA STRICTA. *Roxb.* This is a large tree very common on the western side of the Madras Presidency; the wood, as in all the other erythrinas, is soft, light, and spongy. It is employed as a substitute for deal, is much in use in the manufacture of toys, trunks, etc., and is afterwards varnished, its large pores admitting and retaining the varnish better than almost any other wood; the wood is not liable to warp, contract, or split. It is also used for the scabbards of weapons.—*Beddome.*

ERYTHRINA SUBEROSA. *Roxb.*

Muni, Motaga, . . TAM. | Moduga, ... TEL.

A small tree of all India, growing in every soil and situation; leaves deciduous during the cold season. Flowers in February and March, soon after which the leaves appear; the trunk is generally erect from 8 to 12 feet to the branches. The trunk is covered with deeply cracked corky bark.

ERYTHRINA SUBLOBATA. *Roxb.*

Badadumu?. . . TAM. | Mullu moduga, . . TEL.

This tree is a native of the inland mountains of the Circars, and is frequently of great size, with branches spreading and numerous, and trunk without prickles. The wood is remarkably light, soft, and spongy, and is much employed by the Muchis, who make trunks, toys, and other things that are to be varnished, the wood retaining its priming or under coat of paint better almost than any other wood; and it is not liable to warp, contract, or split. The Muchis at Condapilly and Nursapur are famed for their art in forming and varnishing this wood for toys, etc. It is planted by the Tamil people about their temples. In Bengal, the leaves fall during the cold season in February; when destitute of foliage, the blossoms appear, and soon afterwards the leaves; the seed ripens in May. The trunk is perfectly straight, in large trees five or six feet in circumference, tapering regularly; and the seeds are enveloped in fine soft or silky wool, adhering slightly to them.—*Roxb.* iii. 254; *Rohde's MSS.*

ERYTHROSPERMUM PHYTOLACCOIDES. *Gard.* A middle-sized tree of the Ambagamowa and Ratnapura districts in Ceylon, growing up to an elevation of 1500 feet.—*Thw.* p. 18.

ERYTHROXYLON, a genus of plants of the order Lineæ. E. Burmanicum, Kunthianum, and monogynum are known in the East Indies. The heart-wood of E. monogynum, *Roxb.*, has a pleasant resinous smell, is very hard, and takes a beautiful polish. Beddome gives it as a synonym of E. Indicum, D. C. calls it bastard sandal, also Devadaru and Adavi goranta. Wood is used as a substitute for sandal-wood; and an empyreumatic oil or wood-tar of a reddish-brown colour is procured from it, which is used for preserving the wood employed in construction of native boats.

In South America, the leaves of E. coca, *Lam.*, are dried in the sun, and used as a masticatory. In the time of the first Incas, its use was specially restricted to certain religious rites, and the private consumption of the monarch. But when Peru was subjugated by the Spaniards, they found coca used as a means of exchange in the absence of a metallic currency, and one of their early monopolies was that of its cultivation. At the present time it is largely cultivated in the warmer valleys near La Paz, covering the mountain slopes, under about 7000 feet elevation. The leaves are chewed with a minute quantity of an alkaline paste, serving as a condiment, made from the ashes of the quinoa; but also of a cactus or some other plant, or in some parts of the continent, with lime. One of the most remarkable features in the use of this nervous stimulant, is the power which it confers to endure long-continued fatigue. The miner will perform for twelve long hours the work of the mine, and sometimes even doubles that period, without taking any further sustenance than a handful of parched maize, but every three hours he makes a pause for the purpose of chewing coca. Its leaves are called spadic, also coca, and they contain two alkaloids, cocain and hygrin, also a peculiar tannic acid. More than £600,000 worth are annually collected. Whether the Asiatic species of this genus have this sustaining power, is not known.—*Markham; Poeppig; Bedd. Fl. Sylv.* part vii. p. 81.

ERZRUM, Arz-i-Rum, or Roman or Constantinople territory, was taken with pillage and havoc by the Tartars in 1241. It is the capital of the pashalic which bears the same name, and is about ten days' journey from the Persian frontier. It is built on an elevated plain about 6000 feet above the level of the sea. The cold there is intense, and lasts usually from September till May. Lying on the high road from Persia to Constantinople, it is the resort of many merchants and caravans; but it has not recovered the Russian occupation in 1829, when its fortifications were dismantled, and many of its most opulent and industrious inhabitants, the Armenians, were in-

duced to emigrate. One of the branches of the Euphrates flows at a short distance below the city.

ES or Œs, according to the translator of the Eddas, is the name for God with all the Celtic races. So it was with the Tuscans, doubtless from the Sanskrit, or rather from a more provincial tongue, the common contraction of Eswur, the Egyptian Osiris, the Persian Syr, the sun-god. Thor is called Asa Thor, the Lord Thor; and Odin is also called As or Lord; the Gauls also called him Œs or Es, and with a Latin termination, Hesus, whom Lucan calls Esus. Eswara is a usual title of Siva.—*Edda*, ii. pp. 45-6; *Tod's Rajasthan*, i. p. 564.

ESA KHAIL, an Afghan tribe on the Panjab frontier, who, along with the Shiah Turi and the Jaji, dwell on the daman or skirt of the Sulimani range. The Esa Khail occupy the banks and islets of the Indus in a valley containing 45 villages. It is a narrow oblong strip between the Indus and a long spur of the Khuttak range, that runs southward into the plain.—*Rec. Govt. of India*, No. 11.

ESCHSCHOLTZIA, one of the Papaveraceæ, a very beautiful, very delicate little flower, of a deep yellow orange colour. E. cristata, *Tatarinov*, the Hiang-ju of the Chinese, is a fragrant plant of China.—*Smith; Riddell.*

ESCULAPIUS, amongst the Greeks and Romans, the deified mortal to whom the care of medicine and health pertained. Esmun, the snake-god of the Phœnicians, is identified by Bunsen (iv. p. 259) with the Egyptian Hermes, called Tet and Taautes in Phœnician. Esmun is strictly a Phœnician god. He was especially worshipped at Berytus. At Carthage he was called the highest god, together with Astarte and Hercules. At Babylon, Bel corresponded with him. According to Jamblichus and the Hermetic books, the Egyptian name of Esculapius was Kameph (Bunsen, iv. pp. 256-7). The Aswini-Kumara, the sons of Surya, amongst the Hindus, correspond with the western Greek and Roman Esculapius; but Dhanwantari, a physician, is also the analogue. The Esculapian rod has been supposed by some to be a stem of a Bauhinia plant. It is probably, however, the form serpents assume when in congress, and which is represented at every Hindu serpent shrine. The Hindu Esculapius has no rod.

ESDAILE, Dr., ob. 1859 at Sydenham, a Bengal medical officer, the eldest son of the Rev. Dr. Esdaile, was born at Montrose 6th February 1808. He devoted himself to the study of mesmerism. His first trial was casual. Seeing a felon in agony after a surgical operation, he thought he would try to mesmerize the sufferer, who presently exhibited the phenomena which were witnessed in England. After this time Dr. Esdaile performed a very large number of surgical operations—some of them absolutely gigantic—without pain. In 1846 he removed 21 tumours, some weighing 30 lbs., one 40 lbs., and one 112 lbs.; in 1847-48, one of 40 lbs., and another of 100 lbs. in weight; in 1848, 34, some of very great size and weight. In 1849 he removed 10, some very large. In 1849 he performed 62 capital operations. After 100 capital operations, with insensibility, only two patients died within a month,—one from cholera, and the other from lock-jaw.

ESKAR. Can. A village servant.

ESPARTO, a valuable paper material of N. Africa, in use since the middle of the 19th century. See Stipa.

ESSENIANS, a sect amongst the Hebrews, who every day saluted the rising sun.

ESSENTIAL OILS, called also volatile oils, the Atr of the Arabs and Hwa-lu of the Chinese, are obtained from various parts of odoriferous plants, chiefly by distillation, but also by the chemical perfuming process of enflowering. The best known volatile oils are those of almonds, aniseed, bergamot, cajaputi, chamomile, camphor, caraway, cassia, cinnamon, citronelle, cloves, juniper, lavender, lemons, lemon grass, mint, nutmeg, orange, peppermint, pimento, rhodium, rosemary, roses (otto), savine, sassafras, mint, but in India, sandal-wood, jasmine, nutmegs,—indeed, every odoriferous plant is by the perfumers made to yield perfumed oil. The chambeli-ki-atr of Lucknow, extracted from the petals of Jasminum grandiflorum, sells at 2 rupees per tola. This plant is extensively cultivated in gardens in Lucknow for the sake of its flowers. Motiah or Belak-ki-atr of Lucknow, Jasminum sambac, also extracted from the petals, sells at 2 rupees per tola. It is cultivated extensively in gardens in Lucknow for the sake of its flowers, and is coloured red by means of dragon's blood. The essential oils of cinnamon, citronelle, and lemon grass are made chiefly in the neighbourhood of Galle, in the southern provinces of Ceylon. The oil of cinnamon is also made largely at Colombo from the broken or inferior pieces of bark rejected in packing the bales of spice. The Andropogon muricatum, Jasminum grandiflorum, J. sambac, Lawsonia inermis, Pandanus odoratissimus, and the rose flowers are all utilized. Common mustard oil is often scented with malaghussa, and sold as an essential oil. See Atr; Oils; Otto.

ESTHER. In the centre of Hamadan is the tomb of Ali bin Sina (Avicenna), and not far from it are those of Esther and Mordecai, which are held in great veneration by the Jews of the town, and kept in a perfect state of repair. On the dome over these tombs is an inscription to the effect that Elias and Samuel, sons of Kachan, finished building this temple over the tombs of Mordecai and Esther on the 15th of the month Adar, 4474. The tombs are made of hard black wood, which has suffered little from the effects of time during the 11½ centuries they have existed. They are covered with Hebrew inscriptions, still very legible, of which Sir John Malcolm has given the following translation:—'At that time there was in the palace of Susa a certain Jew of the name of Mordecai; he was the son of Jair of Shimei, who was the son of Kish, a Benjamite, for Mordecai the Jew was the second of that name under the king Ahasuerus, a man much distinguished among the Jews, and enjoying great consideration amongst his own people, anxious for their welfare, and seeking to promote the peace of all Asia.' The traveller, unless told, would never recognise them as tombs. The entry is by a low door, and the tombs occupy the whole of the internal space to the ceiling, leaving only a very narrow passage for walking round the huge stone-like construction in the middle. Literally not an inch is left on the whitewashed

walls on which the Jewish pilgrims of a thousand years have not inscribed their names.—*Ed. Ferrier, Journ.* p. 37.

ESWARA, a title of Siva, who is also styled Mahadeva, the great god; Maheswara, the great lord; Bhuvaneswara, the lord of the earth; Brahm-eswara, is the lord of lords, or the lord of the first creative energy. See Es.

ETA, an unclean race in Japan, curriers, tanners, about three millions.

ETAH, a revenue district in the North-Western Provinces of India, lying between lat. 27° 19′ 42″ and 28° 1′ 39″ N., and long. 78° 27′ 26″ and 79° 19′ 23″ E. Area, 1512 square miles; population in 1872, 703,527. From the 6th to the 10th century, Etah appears to have been held by Ahir and Bhar, and then to have been occupied by the Rajputs. The Rajputs are 57,025; the Banyas or trading castes, 13,056. The Chamars are the most numerous tribe, forming the landless labouring class throughout the whole Doab.—*Imp. Gaz.*

ETAMU. Tel. Pikota, Tam. A lever for raising water.

ETAWAH, a revenue district in the North-Western Provinces, lying between lat. 26° 21′ 8″ and 27° 0′ 25″ N., and between long. 78° 47′ 20″ and 79° 47′ 20″ E. Area (1878), 1691 square miles; population (1872), 668,641 persons. The Chamar, 96,923, are agricultural labourers; Ahir, 75,035, come next, and have some landed property of small value.—*Imp. Gaz.*

ETHER, the air, the atmosphere. In India, amongst the Aryan Hindus of the Vedic times, adoration was offered to Ether as Indra (Zeus), with the sacrifice of milk and the fermented juice of plants. See Elements.

ETHER, medicinal substances obtained by distilling alcohol with an acid. There are several ethers; they are very inflammable.

ETHERSEY, Lieut., Indian navy, in 1834–36 made an excellent but incomplete survey of the Gulf of Cambay; and the coasts to the westward were surveyed by Lieuts. Whitelocke and Constable and Mr. Jones. Between 1844 and 1852, Lieuts. Saunders, Rennie, Taylor, Constable, and other officers, surveyed other portions of the west coast, and Lieut. Selby completed the off-shore soundings on the west coast.

ETHIOPIA, a country mentioned in the Scriptures, corresponding to the present kingdoms of Nubia and Abyssinia. It was also called Seba, also Meroe. It was at one time occupied by Arabs, under a settled form of government, who conquered Nubia and harassed the Thebans. During the earlier Christian centuries the Arabs were conquered by the Egyptians.—*Sharpe*, i. 104.

ETREK, a considerable river, about 300 miles long, which drains a wide valley lying between two ranges of hills. It runs nearly N.W. from near Meshed to the Caspian Sea, into which it disembogues at its S.E. corner. Its lower course is through wide and fertile plains, over which the Yomut Turkomans roam. They have a village on the left bank.—*Collett, C. As.*

ETWAR. Hind. Abbreviation of Adityavara, Sunday.

ETYMANDER, of the classics, is the river Helmand.

ETZEL, known to Europe as Attila, was the leader of the Hiong-nu, a pastoral tribe who had been expelled from the borders of China by the powerful dynasty of Han, and formed one of the tribes who roam in the lands from the Altai to the walls of China. The Hiong-nu, after their inroad on the Gothic empire of Hermanrich, made their way, under Etzel, into the heart of France. Hordes from the same regions, under Togral Beg, and Seljuk, and Mahmud, and Chengiz, and Timur, and Othman, have since then overwhelmed the khalifat and the empires of China, of Byzantium, and Hindustan; and lineal descendants of the shepherds of High Asia still sit on the throne of Cyrus and on that of the great Constantine.

EUCALYPTUS. This genus of lofty trees is found in the Malay Peninsula, but it is chiefly in Australia, where the numerous species occur in great profusion, and, with the leafless acacia trees, give a most remarkable character to the scenery. Several eucalypti have been introduced into India, and are growing on the Neilgherry Hills. Their Australian names—blue, grey, spotted gum trees, etc., iron-bark, stringy bark, blood-wood, box, peppermint, swamp ash, mahogany trees, etc.—are terms which vary in each district. Many of them yield a timber tougher and more durable for shipbuilding than either oak or teak, and not liable to injury from salt water or white ants. An essential oil is extracted from the leaves of one variety, the E. robusta, which was pronounced not unlike cajaputi, and very fragrant. All the varieties tried on the Neilgherries have succeeded, on every description of soil, from the swamp to the poorest clay, at all elevations, but also with a rate of growth little short of miraculous, viz. a foot per mensem, whereas hard woods in Britain progress at the rate of one foot annually. Householders on the Neilgherries are now covering their compounds with the eucalypti, and with that pretty Australian favourite the Acacia melanoxylon, which is so invaluable as a source of fuel; for, like the perennial grasses, the more it is cut the better it grows. E. acmenoides, amygdalina or white peppermint tree or ash tree, botryoides, calophylla or red gum tree, citriodora, coriacea, cornuta or yate tree, corymbosa or blood-wood tree, diversicolor or karri, doratoxylon or spear tree, eugenioides, ficifolia, globulus or blue gum tree, gomphocephala or tooart, goniocalyx, Gunnii, hemiphloa or box tree, leucoxylon or iron-bark tree, loxophleba or York gum tree, macrorrhyncha or stringy bark tree, maculata or spotted gum tree, marginata or jarrah or mahogany tree, melanophloia or iron-bark tree, meliodora or yellow box tree, microcorys or stringy bark tree, microtheca, obliquoa or stringy bark tree, oleosa or mallee, paniculata or white iron-bark tree, phœnicea, pilularis or black butt tree, poalyphylla, polyanthemos or red box, raveretiana grey gum tree or iron gum tree, redunca or white gum tree, resinifera, robusta, rostrata or red gum tree, salmonophloia or salmon-barked gum tree, saliqua or white or grey gum tree, salubris or gimlet wood or fluted gum tree, siderophloia or white iron-bark tree, Stuartiana, tereticornis or red gum tree, terminalis or blood-wood tree, tesselaris, viminalis or manna gum tree, virgata or stringy bark tree. The useful products to be obtained from these trees are very numerous, and include, in addition to timber and potash, oils, tars, acids, dyes, and tans.

E. globulus has acquired a high reputation for rendering habitable localities which were previously

the unhealthy seats of malaria. In Algeria and Portugal are valleys which only a few years since were most unhealthy, but which have been rendered salubrious by the planting of some of these trees; while a striking example of their fever-preventing properties is furnished by the re-habitation of a deserted cluster of monastic buildings in the most desolate part of the Campagna, about three miles from Rome. This was effected by some Trappist monks, who planted, six years since, groves of the eucalyptus. For centuries the fever-stricken monks had battled against the malaria, until, towards the close of the last century, the monastery was deserted. Its leaves have been recommended as a febrifuge; but the Government Quinologist informed the Madras Government that he had examined the bark and leaves of the Eucalyptus globulus, and had satisfied himself that neither quinine, quinidine, cinchonidine, nor cinchonine is contained in the plant in any proportion.

Eucalyptus Oil is a volatile oil obtained from the foliage of all the species of Eucalyptus, from 0·5 to 3·3 per cent. For select varnishes, it dissolves camphor, pine resins, elemi, sandarac, kauri, dammer, asphalte, xanthorrhœa resin, dragon's blood, benzol, copal, amber, anime, shell-lac, caoutchouc, wax, etc.—*F. von Mueller; G. Bennett; O'Sh.; Simmonds; Eng. Cyc.*

EUCHEUMA SPINOSUM, *Ag.*, of Malacca, yields part of the agar-agar of commerce. The plants and their synonyms which yield the commercial agar-agar are as under:—

Eucheuma spinosum, *Ag.*	Gigartina spinosa, *Grev.*
Fucus spinosus, *Linn.*	Plocaria candida, *Nees.*
F. tenax.	Gracillaria tenax.
Gigartina tenax, *Turner.*	G. spinosa.
Bulung, ... JAV.	Agar-agar, . . . MALAY.
Dongi dongi, . . . MAC.	Karang, Sajor-karang, ,,

Plocaria candida, *Nees*, yields the Ceylon moss; and the whole thallus of this one of the algæ is sometimes imported from Ceylon into Britain, and used there for dressing silk goods. The Malay name of agar-agar is also given to the Gracillaria spinosa, likewise one of the algæ, of the order Rhodymeniaceæ, and seems to have as synonyms Gigartina tenax, also Gracillaria tenax, also Fucus tenax of Turner. Mr. Williams and the Honourable Mr. Morrison say of the Gigartina tenax, that the Chinese people collect this sea-weed on the coast to a great extent. It is boiled, and the transparent glue obtained is brushed upon a porous kind of paper called sha-chi, which it renders nearly transparent. It is also used as a size for stiffening silks and gauze, and is extensively employed in the manufacture of lanterns and in the preparation of paper for lattices and windows. This and other kinds of fuci are boiled down to a jelly by the islanders on the south, and extensively used for food (Williams, p. 275). The Honourable Mr. Morrison says of the Gracillaria tenax, the Fucus tenax of Turner, about 27,000 pounds of it are annually imported into Canton from the provinces of Foh-kien and Tchi-kiang, and sold for 6d. to 8d. the pound. Mr. Neill thinks that the gummy substance, called chin-chou or hai-tsai in China and Japan, may be composed of this substance. Windows made of slips of bamboos, and crossed diagonally, have frequently their interstices wholly filled with the transparent glue of hai-tsai.—*Morrison, Comp. Summ.; Williams.*

EUCHIRUS, a genus of beetles, one of the Lamellicornes, said to have similar habits to its congener Lucanus cervus. Euchirus longimanus, the long-armed chafer of Amboyna, drinks the sap of the sugar palms. It is a sluggish insect.—*Wallace*, p. 300. See Beetles; Insects.

EUCHLÆNA LUXURIANS. *Durieu.* A fodder grass of Guatemala; has been introduced into Northern India.

EUCRATIDES, a Bactrian king, B.C. 185, who ruled over Bactriana, Ariana, Patalene, Syrastrene, Larice, Nisa, Gandharitis, Peukelaotis, and Taxila. While still ruling, Antimachus Nicophorus seized part of his dominions, and, after the parricidal murder by Heliocles of Eucratides, his countries remained in the hands of Antimachus Nicophorus and Apollodotus. The Aryan written character was adopted first on the coins of the Greek kings, from Eucratides down to the barbarian king Hermæus. Eucratides was the earliest of the Greek kings of Bactria, Kābul, and Arya who adopted bilingual inscriptions on his coins. It is supposed he did so consequent on his conquest of the Paropamisus after assumption of the title of Great King. On his murder by his son Heliocles, his wide dominions are supposed to have been broken into several independent kingdoms. His parricidal son ruled for a few years over Bactria and Paropamisus, under the title of Eucratides II. According to Cunningham (Hist. Panj. i. p. 57), Eucratides invaded India B.C. 165, and annexed the Panjab southwards to Patala, in Sind, the modern Hyderabad, which on his demise fell to Menander or Apollodotus. A list of kings, he says, had been obtained from recently discovered coins, of Greek mintage, bearing Aryan inscriptions on the reverse, ranging from 153 to 120 B.C., who are supposed, upon good grounds, to have been sovereigns of the Panjab, the valley of the Indus, and Kābul.—*Thomas' Prinsep; History of the Panjab*, i. p. 57.

EUDEMOS, a Greek ruler in the Panjab, who, along with Taxiles and Porus, was named by Alexander to succeed Philip, on the murder of the latter by the mercenary soldiery. The Greek colonists in the Panjab had first been placed under Philip, while the civil administration remained in the hands of Taxiles and Porus. After Alexander's death in B.C. 323, Eudemos made himself master of the country by the treacherous assassination of king Porus. A few years later, in B.C. 317, he marched, with 3000 infantry and 5000 cavalry and 120 elephants, to the assistance of Eumenes, and did good service at the battle of Gabiene, but during his absence Chandragupta roused the nation, and slaughtered and expelled the Greeks. See Chandragupta.

EUDYNAMIS ORIENTALIS. *Linn.*

Kokil, ... BENG.	Nallak (male), . . TEL.
Koel (the male), . HIND.	Podak (female), . . ,,
Koreyala (the fem.), ,,	

The male bird is greenish black throughout, and the female is glossy dusky green, spotted with white above. Like the cuckoo, the koil lays its eggs in the nests of other birds. The nest of the seven brothers, the satbhai, is selected occasionally, and it is a curious sight to see these social birds unitedly feeding the young koil that has been hatched in their nest. Because the koil's song is especially heard at the season of spring, it is called the friend of love—

'Sweet bird, whom lovers deem Love's messenger,
Skilled to direct the god's envenomed shafts,
And tame the proudest heart; Oh, hither guide
My lovely fugitive, or lead my steps
To where she strays.'

—*Pantheon*, p. 206; *Hero and the Nymph; Jerdon.*

EUGEISSONIA TRISTIS, *Griff.*, and E. truncata, *Griff.*, Bartam, MALAY, palms growing on the hills about Ching, Malacca, and Penang. E. truncata, *Griffiths*, is a stemless palm, growing in thick tufts, which are surrounded by the debris of the old leaves. Leaves numerous, the outer ones spreading, fifteen to twenty feet in length. It is very common, and in Penang is much used in making mats for sides of houses, for thatch, and for the same purposes as those of Nipa fruticans. —*Griffiths' Palms.*

EUGENIA, a genus of plants named in honour of Prince Eugene of Savoy. It still contains nearly 200 species, though numbers have been removed to the genera Nelitris, Jossinia, Myrcia, Sizygium, Caryophyllus, and Jambosa, in which are now contained the clove-tree, the rose-apple, and jamoon of India, formerly included in Eugenia. This genus is confined to the hot and tropical parts of the world, as Brazil, the West India Islands and Sierra Leone, and extends from the Moluccas and Ceylon in the south to Sylhet and the foot of the Himalayas in the north. Some of the species secrete a warm volatile oil in their herbaceous parts, abound in tannin, yield good wood, and a few have fruits which are edible, though not very agreeable, from being impregnated with the aroma of the oil. Dr. Wight gives, in Icones, 66 species of the E. Indies; and Duthie and Gamble name 77 species. Dr. Thwaites enumerates several species in Ceylon. The generally accepted names of the species are—

acuminata.	grandis.	oblata.
albiflora.	grata.	obovata.
alternifolia.	Helferi.	obtusifolia.
amplexicaulis.	hemisphærica.	occlusa.
aquea.	Heyneana.	operculata.
areolata.	inophylla.	pachyphylla.
argentea.	jambos.	paniala.
Arnottiana.	jambolana.	pellucida.
balsamea.	Javanica.	polyantha.
Beddomei.	Jossinia.	polypetala.
bifaria.	Khasiana.	ramossima.
brachiata.	Karzii.	revoluta.
bracteata.	lacta.	Rottleriana.
bracteolata.	lanceæfolia.	rubens.
calcadensis.	lanceolaria.	rubicunda.
calophyllifolia.	lepidocarpa.	rubricaulis.
caryophyllata.	leptantha.	Singampattiana.
caryophyllifolia.	lissophylla.	Stocksii.
claviflora.	macrocarpa.	tetragona.
codyensis.	macrosepala.	thumra.
cuneata.	Malabarica.	toddalioides.
cymosa.	Malaccensis.	tristis.
diospyrifolia.	mangifolia.	venusta.
floccosa.	microphylla.	Wallichii.
Formosa.	Mooniana.	Wightiana.
frondosa.	montana.	Wynadensis.
fruticosa.	Monronii.	Zeylanica.
Gardneri.	myrtifolia.	

EUGENIA ALTERNIFOLIA. *Roxb.*

Manchi-moyadi, . . TEL.	Movi chettu, . . . TEL.
Moyi chettu, . . . ,,	

A very beautiful species, growing in Kurnool, Cuddapah, and N. Arcot; timber used for building and other purposes.—*Roxb.*

EUGENIA CARYOPHYLLATA. *Thun.*

Caryophyllus aromaticus.	Myrtus caryophyllus, *S.*
Lavunga, . . . BENG.	Ran jambool, . . MAHR.

The clove tree of the Moluccas, cultivated in Ceylon, the Malay Peninsula, in the south of India, in Travancore, also in Mauritius and Bourbon. The cloves (laung karanful) of commerce are the unopened flowers, the flower-buds. It is hardly found on the Bombay side north of the Savitree. South of that river it is found only in Rajees or greenwood jungles, and about temples. The wood appears quite equal to that of the common jambul, the Eugenia jambolana.—*Roxb.; Gibson; Voigt.*

EUGENIA CARYOPHYLLIFOLIA. *Roxb.*

Calyptranthes caryophyllifolia, *Ains.*

Choto jam, . . . BENG.	Nawel maram, . . TAM.
Thab-yeh-gah, . . BURM.	Neredu manu, . . ,,
Naradidi Vriksha, CAN.	

It is a native of various parts of India, growing luxuriantly in almost every soil and situation. Flowering time the hot season; bears a round berry, black when ripe, the size of a pea. The wood is very strong, close-grained, hard, and durable.—*Roxb.*

EUGENIA CYLINDRICA. *W. Ic.* Jambosa cylindrica, *Thw.* When in flower, a middling-sized Ceylon tree, section Jambosa, very beautiful, at 3000 feet elevation.—*Bedd.*

EUGENIA FLOCCOSA. *Bedd.* This is a good-sized and most beautiful tree, section Eugenia, very common in the dense moist woods on the South Tinnevelly ghats above Calcad, at 3000 to 4000 feet elevation, flowering in August and September.—*Bedd. Flor. Sylv.*

EUGENIA FORMOSA. *Wall.* An evergreen moderate-sized tree of the Sub-Himalaya and Tenasserim, with very handsome large flowers and large fruit.—*Wall.*

EUGENIA HEMISPHÆRICA. *W. Ic.* A very handsome, large tree, is common in the mountain forests from South Canara down to Cape Comorin at about 3000 feet elevation; is abundant in Coorg, the Animallays, and Tinnevelly ghats, and is also found in Ceylon up to 4000 feet. The timber is used for a variety of purposes.—*Beddome.*

EUGENIA JAMBOLANA. *Lam., Roxb.*

Syzygium jambolanum, *D. C., W. I., W. Ill., W. and A.*
S. caryophyllifolium, *D. C.*
Eugenia caryophyllifolia, *Lam.*
E. obtusifolia, *Roxb. Fl. Ind.* ii. p. 485.
Calyptranthes jambolana, *Willde.*
C. caryophyllifolia, *Willde.*
Myrtus cumini, *Linn.*

Kalo jam, . . . BENG.	Kotti naga maram, . TAM.
Rai jamun, Jambool, HIND.	Pedda neredu, . . TEL.
Peru nagal, Sina nagal, TAM.	Sanna neredu, . . ,,

It grows in Coimbatore, Ganjam, Gumsur, Bengal, and Kamaon. About Madras this tree is generally much destroyed by the carpenter bee. Dr. Gibson says the wood makes excellent beams, but on account, probably, of its brittleness, is never cut up for cabinet purposes. The bark affords a large supply of a kino extract.—*Drs. Wight, Gibson, Voigt, Cleghorn; Captain Macdonald.*

EUGENIA JAMBOLANA. *Lam., Roxb., W. Ic.*

E. fruticosa, tab. 624.
E. Morei, *F. Muell. Fragm.* v. 33.
E. caryophyllifolia, *Lam., Wight Icones*, 553.
Syzygium jambolanum, *D. C.* iii. 259.

Jambool, ... BOM.	Madang, ... SING.
Narala, ... CAN.	Nawal, Nawar, . . TAM.
Jamun, ... HIND.	Naregar, ... TEL.

This large and beautiful tree is found almost everywhere throughout the plains of India, whereas most of the other species affect the mountains. It is much planted in topes and avenues in the Madras Presidency, but it ascends the mountains to 4000

or rarely 5000 feet elevation. It is also indigenous in the Archipelago and in Australia. The bark is strongly astringent, and dyes excellent durable browns, and it yields an extract like the gum kino. The jamun fruit is eaten; and that from some of the larger fruiting varieties (when it is as large as a cherry, or much larger) is very agreeable. The fruit of the very small fruiting variety (E. caryophyllifolia, *Lam.*) is not eaten, and is not larger than a pea.—*Beddome*, p. 197.

EUGENIA MALABARICA, *Bedd.*, is very common in the Wynad in Malabar, at 2000 to 4500 feet elevation, generally in swampy places, and also occurs in the Animallays.—*Bedd. Fl. Sylv.*

EUGENIA ZEYLANICA. *Wight, Ill.*

Acmena Zeylanica, *Thw.* | **Var. B. laxiflora.**

This tree is of the Acmena section of Eugenia. It is common on the South Tinnevelly mountains up to 3500 feet, where it generally affects beds of rivers, and in Ceylon, where it is called morang; it is very beautiful when in full flower.—*Bedd. Fl. Sylv.* p. 202.

EU-HO, called also the Yun-lian-ho, a river of China, a tributary of the Pei-ho river. At the junction is the town of Tien-tsing-fu, a place of great trade.

EULOPHIA CAMPESTRIS, *Lindley*, is found in Oudh, Rohilkhand, in the Siwaliks of the Gangetic Doab, and in low land by the Ravi, close to Lahore. E. herbacea, *Lindley*, occurs in Southern India and the Outer Himalaya, near the Jumna; and E. vera, *Royle*, occurs near the Jhelum river, in the Panjab, Himalaya. The tubers of all three are used as salep.—*Dr. J. L. Stewart.*

EULOPHIA VIRENS. *R. Br.*

Limodorum virens, *Roxb.*

Khassiat us Salib, ARAB.	Goru chettu gadda, TEL.
Whitlow root, . . ENG.	Raye duru dumpa, ,,
Salep misri, . . . ,,	Orkis, Saturyun, YUNANI.
Verduru gadda, . . TEL.	Turphylla, . . . ,,

The tubers form part of the saleb misri or salep of commerce. Most of the rhizomata of the family Orchidaceæ yield starch in a peculiar form, and are used under the name of salep as an article of diet. The same use is made of the rhizomata of the species of Eulophia.—*Lindley; Birdwood; Hogg; Voigt*, 629.

EUMETA CRAMERII. *Westw.*

Sack trager, . . . GER.	Kundi puchi, . . TAM.
Dalme-kattea, . SINGH.	Muluka rasari, . . ,,

This is one of the wood moths or wood carriers of Ceylon. The insect gathers a bundle of thorns or twigs about it, binds them together by threads so as to form a case. The male, at the close of the pupal rest, escapes from one end of the case, but to the female it is a covering for life. Another species is E. Templetonii.—*Tennant's Ceylon.*

EUNUCH.

Eunuque, ... FR.	Eunuco, ... SP.
Verschnittene, . . GER.	Khadim, . . . TURK.
Khajah, Khoja, . HIND.	

Eunuchs are employed in the households of the Mahomedans and Hindus of Egypt, Persia, Arabia, India, and China. We learn from Herodotus (lib. 6) that the Persians in remote times were waited upon by eunuchs, and some attribute to them their introduction. Ammianus Marcellinus (lib. 14) ascribes the origin to Semiramis. Burton says that they were not known in Arabia at the time of Mahomed; but in the chapter of the Koran on Nur or Light, men who have no need of women are spoken of as persons before whom women may appear; the learned, however, do not agree as to who were there meant. Burton also (Pilgrimage, ii. 74 to 155) mentions eunuchs coming to the prophet's tomb. Nearly all the slave-hunters in Abyssinia, when they catch a young lad, mutilate him completely, and send him over to Mecca; and lads are still said to be mutilated in Rajputana and in Aurangabad. Dr. Wolff (Bokhara, vi. p. 217) mentions that in his time several of the eunuchs were married to several wives, and he instances Manujar Khan, the governor of Isfahan; others of them have wives. Sir John Malcolm had known only two or three instances of eunuchs being employed in situations of trust during the reign of the king of Persia, to whom he went as ambassador. He, however, observed that they were treated with uncommon attention and deference. In Hyderabad, in the Dekhan, eunuchs are few. Eunuchs in India have the title of Agha, also of Khajah, or Khojah. The eunuchs employed in the imperial haram of China sometimes rise to positions of eminence.—*Malcolm's Persia*, ii. p. 438, 155, n.; *Burton's Mecca*, iii. p. 408.

EUONYMUS, a genus of plants belonging to the natural order Celastraceæ. About thirty species, mostly small trees, are known to occur in the south and east of Asia. E. echinatus of Nepal is a shrub or climber. E. glaber occurs in Chittagong; E. grandiflorus, and E. Hamiltonianus, *Wall.*, in the Dehra Doon; E. grossus in Nepal; E. dichotomus, E. Goughii, and E. acutangulus, in the Peninsula. In Japan are japonicus, Sieboldianus, Thunbergianus, subtriflorus, Hamiltonianus, latifolius.—*Roxb.; Voigt.*

EUONYMUS CRENULATUS. *Wall.* A small tree, common on the Neilgherries, Pulneys, and higher parts of Western Ghats of the Madras Presidency. The wood is white, very hard and close-grained, and answers for wood engraving, and is about the best substitute for boxwood in the Madras Presidency; the wood of the other species is very similar.—*Beddome, Fl. Sylv.*

EUONYMUS FIMBRIATA.

Saki, Sikhi, Papar, HIND. | Bar-phulli, Batal, . HIND.

Wood hard and useful; it is beautifully smooth and white.

EUONYMUS GARCINIFOLIA. *Roxb.* i. 628.

Nooee of . . . NEPAL. | Mori of . . . SYLHET.

A small tree, growing near the Bombay ghats in the upper country to the south. It seems to be often cultivated in Canara, on account of its straightness, as applicable for house rafters. It does not reach a size sufficient to fit it for general purposes.—*Dr. Gibson.*

EUONYMUS JAPONICUS, the Tu-chung and Muh-mien of the Chinese. It grows in Honan, Shen-si, and Shan-si. The leaves are eaten when young; fruit is astringent; wood used for making pattens. On breaking the bark, a delicate, silvery, silky fibre is seen.—*Smith.*

EUONYMUS REVOLUTUS. *Wight, Ill.* A middle-sized tree of Nawera and other very elevated parts of Ceylon.—*Thw.*

EUONYMUS TINGENS. *Wall.* The bark in the inside is of a fine yellow colour, similar to that of rhamnus. It is used to mark the tika on the forehead of the Hindus, and is considered by the natives to be useful in diseases of the eye.—*Royle; O'Sh.*

EUPATORIUM TRIPLINERVE. *Vahl.*

E. ayapana, *Vent.* | E. aromaticum.
Ayapana, . . . Beng., Hind.

The dried leaves and twigs are used in medicine. An infusion is a very agreeable diaphoretic and mild tonic, and is a favourite remedy among the native practitioners. There are several exotic species, E. Guaco, E. odoratum, E. perfoliatum, and E. rotundifolium, or bone-set, is possessed of greater bitterness and less aroma than E. triplinerve, and is stated to be employed with much success as an antiperiodic in the intermittent fevers of the United States of America.—*O'Sh.*

EUPHORBIACEÆ, the Euphorbium tribe of plants, consists of trees, shrubs, or herbs, many of them abounding in an acrid juice. The number of species has been estimated at 1500, and Dr. Roxburgh describes 120 in India. The general property of this order is that of exciting, varying in degree from mere stimulants to the most dangerous poisons. The application of heat is sufficient to destroy the stimulating principle, as in the instance of the Jatropha manihot or cassava, which when raw is poisonous, but when roasted becomes a nutritious article of food. A caoutchouc, turnsol, and farfiyun are useful products of the order. The more important genera in the East Indies are agneya, aleurites, acalypha, Bridelia, buxus, cnemidostachys, cicca, cluytia, crozophora, croton, codiæum, emblica, elæococca, excœcaria, euphorbia, fluggea, glochidon, hura, janipha, jatropha, macaranga, phyllanthus, plukenetia, poincettia, Rottlera, ricinus, sapium, stillingia, siphonia, sarcococca, stylodiscus, xylophylla. Williams says (Middle Kingdom, p. 107) that in China a strong oil is derived from the seeds of two or three plants belonging to the euphorbiaceous family, for mixing with paint, smearing boats, etc. Voigt enumerates 31 species of Euphorbium as known in India, viz. :—

acaulis.	ligularia.	prolifera.
antiquorum.	lincaris.	prunifolia.
arborescens.	lophogona.	punicea.
bojeri.	maculata.	pyrifolia.
bupleurifolia.	mellifera.	sessiliflora.
chamæsyce.	nivulia.	splendens.
dracunculoides.	parviflora.	thymifolia.
exigua.	peltata.	tiraculli.
hirta.	peplis.	trigona.
hoyæfolia.	picta.	uniflora.
lactea.		

In February and March, women are to be seen wherever the milk-bush prevails. They apply the milk to their bodies and limbs, and then stick the places over with tufts of raw cotton. It produces a hot and slightly prickly feeling, and a small degree of blistering. It is considered good for the health, and is supposed to ensure fecundity. The exhibitions seen at this season, in applying the milk, are often indelicate in the extreme. The Euphorbia plant is sacred with the Kachari. It is the representation of their god Batho, and is worshipped by them.

The gum euphorbium plant of Morocco is the E. resinifera. The juice issues from incisions made with a knife. The people who collect the gum tie a cloth over their mouth and nostrils, as the small dusty particles produce incessant sneezing. The branches are used by the tanners, and to it probably the morocco leather owes its reputed pre-eminence. Iron coated with the juice of some of the euphorbia does not rust, even though long immersed in water. To this end the gum is dissolved in spirits, and applied as a coating for ships' bottoms, and for ironwork generally, the spirits evaporating, and the gum being left on the surface of the metal. The composition has also been successfully tested in Africa against the ravages of the white ant.

EUPHORBIA ANTIQUORUM. *Linn.*

Tekata sij, . . . Peng.	Thuar, ... Hind.
Nara sij, . . . ,,	Shadida kalli, . Maleal.
Triangular spurge, Eng.	Shadre kalli, . . Tam.
Nara sij ; Siard, . Hind.	Bonta-chemudu, . Tel.

A common plant in the south of Asia. The inspissated milky juice of this species is said, in common with that of other succulent euphorbias, to produce the drug euphorbium. In India this is mixed with sesamum seed oil, and used externally in rheumatic affections, and internally in cases of obstinate constipation. It is worshipped by Hindus as Manusa, the serpent goddess.—*Roxb. ; Ainslie.*

EUPHORBIA CANARIENSIS. *Linn.*

Akeil nefseh, . . Arab.	Sudusudu, . . Malay.
Firfyoon, Firbeyoon, ,,	Furbiune, . . Morocco.
Shia-dzaon, . . . Burm.	Sheer-darakht-zokoom,
Canary spurge, . Eng.	Pers.

In the Canaries, on volcanic soil, this and E. laphylla form great bushes, with arms like candelabras.

EUPHORBIA CATTIMANDU. *W. Ell.*

Aku chenrudu, . Tel. | Kattimandu, . . Tel.

In Telugu, literally 'knife medicine,' because used to fix knives in wooden handles. The juice of this plant is used in Telingana in cementing iron with other substances. At the Madras Exhibition of 1855, Mr. Elliot exhibited a basin, ewer, and tumbler made of cattimandu gum, moulded with the hand, without any preparation. The fresh juice is used as a vesicant.

EUPHORBIA CHAMÆSYCE. *Linn.*

Ti-kin, ... Chin. | Tsioh-rh-ngo-tan, . Chin.

Grows in Ch'u-chau in Ngan-hwui in China. Juice purgative; also applied externally in skin diseases.—*Smith.*

EUPHORBIA LATHYRIS.

Spurge, ... Eng.	Sudab, ... Hind.
Caper spurge, . . ,,	

The seed of this euphorbium contains yellow fixed oil, stearine, acrid brown oil, crystalline matter, brown resin, an extractive colouring matter, and vegetable albumen. The seeds purge, and cause violent vomiting; they are used in dropsy.—*O'Sh.* p. 565; *Powell*, i. p. 376.

EUPHORBIA LIGULARIA. *Roxb.*

Munsa sij, . . . Beng. | Sha zoung, . . Burm.

A plant sacred to Munsa or Manusa, the goddess of serpents. The root, mixed with black pepper, is employed for the cure of snake-bites, both internally and externally.—*Roxb.* ii. 465; *O'Sh.*

EUPHORBIA LUNULATA. *Smith.*

Ts'eh-tsih, . . . Chin. | Miu-yen-ts'au, . . Chin.

This is called cat's-eye euphorbia. Its young shoots are edible; used also like E. chamæsyce. —*Smith.*

EUPHORBIA NIVULIA. *Buch., W. Ic.*

E. nereifolia, *Linn., Roxb., Rheede.*

Patteun, P'tun, Sij, Hind.	Elle kalli, . . . Tam.
Pattakarie, . . . Sansk.	Akuje madu, . . Tel.

Branches round; juice used by the natives as a

purgative; externally, mixed with nim oil, as a stimulant in rheumatism and contracted limbs; leaves diuretic. Grows all over the rocky parts of the Dekhan. Abundant over all the hills within some miles of Ajmir. It has a whitish, dead appearance, except during the rains, and forms a capital fence round fields, etc.—*Irvine; Riddell; Honig.; O'Sh.*

EUPHORBIA ROYLEANA. *Bois.* Shakar-pitan, HIND. Grows wild in the Siwalik tract; is used as a hedge plant, growing on a dry rock. By boiling down the juice of this euphorbia, adding dates, and again boiling and skimming, a gutta-percha-like material was obtained, better fitted for cementing iron than that from the Ficus Indica or F. religiosa, etc.—*J. L. Stewart, M.D.*

EUPHORBIA THYMIFOLIA. *Linn.*

Shwet kherua, . . BENG.	Patcha-arisc? . . TAM.
Duddhi, ... HIND.	Sittrapaladi, . . ,,
Racta vinda chada, SANSK.	Bidduru nanabiyam, TEL.
Chin-amam, . . TAM.	Reddi-vari-nana-bala, ,,

This little annual plant is common in the south of Asia. Its juice and flowers are purgative, and given in worms.—*Roxb.; O'Sh.; Honig.*

EUPHORBIA TIRACULLI. *Linn.* Milk-hedge.

Azfur zukkum, . ARAB.	Tirukalli, . . MALEAL.
Lanka sij, . . . BENG.	Shir tothar, . . . PERS.
Indian tree spurge, ENG.	Tirukalli, . . . TAM.
Sendh, ... HIND.	Kalli chemudu, . TEL.
Seyr teg, ... MAHR.	Lodhoka sijhu, . . URIYA.

Natives of India suspend in their houses a few branches of the milk-hedge to attract flies. On the Bombay side it is used as a dunnage material for the flat roofs of houses. The root of old shrubs is adapted for gun-stocks, but plants of sufficient age are seldom met with. On the Godavery it grows to a tree, and the wood seems hard, but is not used there. The plant is much used for hedges. It grows best either upon a bank, or wall of large stones laid loosely for the purpose, having a good cover of earth upon it. Any cuttings will grow, and the plant, if by itself, will attain the height of 20 feet or more. The wood makes the best charcoal for gunpowder. A parasite of a yellow thread-like appearance, and leafless (the Cassyta filiformis), is very destructive to it, and will totally destroy a tree or a whole hedge in a short time, if not removed. The milk, mixed with flour, in doses of a drachm daily, is used to blister, as an Indian specific in syphilis. The inspissated milk is a violent emetic and purgative.—*Roxb., O'Sh., Wight, Riddell.*

EUPHORBIUM.

Farfiun, Akal-nafzah, AR.	Vajrakshira, . MALAY.
Zekum, Gholak, Kala, ,,	Vajrakantaka, . SANSK.
Nara-shij, . . . BENG.	Dalukgaheh-kiry, SINGH.
Shia-d'zaon, . . BURM.	Shadr'kalli pall, . TAM.
Saynd-ka-dud, . . HIND.	Bonta jemmudu palu, TEL.
Sudusudu, . . MALAY.	

A concrete gum-resin, obtained from Euphorbia Canariensis of N. Africa and the Canaries, E. officinarum of Arabia and Africa, E. antiquorum of Arabia and India, and E. tetragona. That found in the Indian bazars is from E. antiquorum and other species. King Juba of Mauritania is said to have called it after his physician, Euphorbus.

EUPHORIA LONGANA. *Roxb., Lam.*

Scytale longana, *Roxb.*	Nephelium longanum, *Comb.*
Dimocarpus longana, *Lour.*	
Longan, ... CHIN.	Wumb, . MAHR., TAM.
Mal-ahoota, MAHR., TAM.	Mora, ... SINGH.

A rather large, handsome tree, common in Ceylon in all the jungles, up to 3000 feet, on the west side of the Madras Presidency, in South Canara, the Animallays, Tinnevelly mountains, the Sivagherry Hills, Courtallum, in Mysore, Bombay, Eastern Bengal, and China. The wood is said to be hard, close-grained, and white, and worth attention. The succulent aril of the seed is an agreeable acid, and something like the Litchi. As a genus it should not, Col. Beddome thinks, be kept distinct from Nephelium.—*Bedd. Fl. Syl.*

EUPHRASIA OFFICINALIS, euphrasy, eye-bright, a native of the heaths and pastures of Europe, of the Himalaya, Kashmir, and all the north of Asia. It is a pretty plant, slightly bitter and aromatic; once celebrated as an application to weak eyes, but now seldom or never employed.—*O'Sh.; Hogg; Honig.*

EUPHRATES, in Arabic and Persian Forat or Forath, in the Hebrew language Perath or Phrath, words which mean to fructify or to fertilize. The elevated plateau which extends from the base of Mount Ararat into Northern Armenia, Kurdistan, and part of Asia Minor, contains the sources of four noble rivers, having their estuaries in three different seas. One of these, the Euphrates, rising near the shores of the Black Sea, and in its course to the Persian Gulf almost skirting those of the Mediterranean, at one time formed the principal link connecting Europe commercially with the East. It has two great sources in the Armenian mountains, and the most northern of these sources is situated in the Anti-Taurus, 25 miles N.E. of Erzerum. The branch from thence takes at first a westerly direction, and, after passing within 7 or 8 miles of the capital of Armenia, it is joined by two small feeders. Its first large tributary, however, is the Mahmah Khatun, which runs into it down the plain of Tejran. From hence the river, which is now a considerable stream, known by the name of the Kara Su, makes a circuit, winding through the mountains and over rapids, into the plain of Erzingan, through which it flows in the same general direction, close to the town of that name. At Erzingan it is fordable only at a few places even in the dry season. As it nears the ancient Hit, with its bituminous fountains, the stream has an average width of 350 yards with a depth of 16 feet, and a current of three knots per hour in the season of the floods, when there are fourteen islands, on some of which are small towns. About 70 miles lower down is the modern castle of Felujia, situated 29¾ miles W. 2° N. of Baghdad. The average width in this part of the river decreases a little, being only about 250 yards, with an ordinary depth of 20 feet; and there is a current of less than 2½ miles per hour in the flood season, when the river forms thirteen islands without wood. About Felujia, at 5¾ miles N. 60° W. from it, the deviation, or channel, called the Saklawiyah, takes place; this stream crosses Mesopotamia by a tortuous eastern course on the north side of Akar Kuf, and enters the Tigris at a point 5 miles below Baghdad, but, until altered by Daud Pasha to avoid the danger of inundations, it joined the Tigris a little above the city. The distance from river to river (by the course of the Euphrates steamer, in passing, under Lieut. Lynch, in 1838) is about 45 miles. Near the junction of the Euphrates and Tigris, in lat. 31° N. and long. 47° E., after a course of 950 miles,

is the walled town of Kurnah, containing about 800 houses, disposed along the right bank of the Tigris and the left of that of the Euphrates. The Euphrates and Tigris from this form one tidal channel, almost half a mile wide, and which takes nearly a straight course S. 37° E. under the well-known appellation of Shat-el-Arab, and when 5 miles below Kurnah, their united waters receive those of the Kerah or Kerkhah, which, coming from the mountains of Ardelan through an extensive tract of country, passes a short distance westward of the ruins of Susa, and likewise of the town of Hawizah. After receiving this accession, the Shat-el-Arab flows through date groves and near several villages, chiefly on the left bank, and at length arrives opposite Basrah, which is 39½ miles by the river, and 36 miles S. 34° E. direct from Kurnah. Basrah is built on both sides of a creek or canal, and contains about 6000 houses, which commence nearly at the edge of the main stream, and on its right bank. Below the city, this majestic river sweeps a little more to the eastward; its width is about 700 yards, its ordinary depth 30 feet, and it forms three large islands between this place and the small town of Mohamarah, that is, within a distance of 22½ miles by water, or 20½ miles direct S. 70° E. Here the Karun enters it, after a long course from the Koh-i-zard, through Shustar, Ahwaz, and other places. After this great accession to its waters, the Shat-el-Arab inclines a little more towards the south. During the remainder of its course it passes many large villages, and almost continuous belts of date groves, and at length it reaches the sea, which at the bar is 40 miles from Mohamarah. Between this last place and the sea its average width is 1200 yards, and its ordinary depth 30 feet.

The permanent flooding of the Euphrates is caused by the melting of the snow in the mountains along the upper part of its course. This takes place about the beginning of March, and it increases gradually up to the time of barley harvest, or about the last days in May, when it is usually at its greatest height. The river continues high, and its course very rapid, for 30 or 40 days; but afterwards there is a daily decrease, which becomes very small and regular towards the autumn. From the middle of September to the middle of October the river is at the lowest. Lieut. Rennie found the quantity of water discharged by the Euphrates at Hit to be 72,804 cubic feet per second; and the quantity discharged by the Tigris at Baghdad to be 164,103 cubic feet.

The Euphrates and Tigris valleys are inconsiderable strips of good land, hemmed in closely by a barren desert. They have long ceased to lie on the track of commerce. They contain no place of importance, with the exception of the pilgrim shrines of Kerbela and Meshed Ali, and the decayed city of Baghdad, and a few villages, depending for their subsistence on the date palm, the disforesting of the hills in the upper part of their course having rendered both the Tigris and the Euphrates subject to sudden freshets, which overflow the banks, and wreck the labours of the husbandman. For 150 miles the latter river passes through a barren desert, succeeded by unprofitable marshes, while the Tigris from Mosul to Baghdad boasts but three inconsiderable villages, and from Baghdad to Bussora about six. Irak, the ancient Babylonia, is now either a swamp, or an unproductive desert covered with reh, the result of over-irrigation in ancient days. Owing to rapid alternations of flood and drought, this vast plain, once so fertile, is neither habitable nor cultivable at the present day. The great irrigation works constructed by captives have fallen into irreparable ruin; and the miserable Arab population that now dots the plain of Irak, is useless for any kind of sustained labour. So late as the 12th century, Upper Mesopotamia contained several flourishing towns, dependent, however, for their existence on the traffic between Eastern Asia and Europe. As trade declined, these different stations gradually disappeared, and, under the terrible effects of Mongol and Othoman conquests, Western Asia was rapidly depopulated, and reduced to its present condition. South-Western Persia is at present destitute even of nomadic and pastoral tribes, with the single exception of a tract of cultivated land lying between Dizful and Shustar, and another between Dilam and Bushire. Nevertheless the region will ever be of interest. The valley of the Euphrates and Tigris is the home of man's earliest traditions; and Babylon was on the Euphrates, Nineveh on the Tigris. The Euphrates was crossed by Abraham. The crossing of the Tigris, the passage of which is noticed as Heber (Eber), occurred B.C. 4500 or 5000, subsequent to Nimrud. The mountainous lands at the sources of this river formed the primeval seat of the Semitic races (Bun. iii. pp. 413-460). The western side of the Euphrates, and stretching towards Felujia, is a tract pregnant with interest; for between the last-named place and the bitumen springs of Hit, the battle of Cunaxa was fought, in which the younger Cyrus lost his life, and whence Xenophon made a retreat more brilliant than victory.—*Mignan's Travels*, pp. 254, 326; *Porter's Travels*, ii. p. 252; *Skinner's Journey*, ii. p. 185.

EUPLÆA MIDAMUS, a very beautiful butterfly of the Malay Archipelago. It is exactly mimicked by two rare papilios (P. paradoxa and P. senigma). The even more beautiful E. rhadamanthus, with its pure white bands and spots on a ground of glossy blue and black, is reproduced in the Papilio caunus.

EUPLECTELLA ASPERGILLUM, a superb sponge found in Japan, the Moluccas, and Philippine Islands. The strangest, as well as the most beautiful, inhabitants of the deep-sea ooze are the glassy sponges, in which the skeleton is composed not of horny fibres, as in the sponges of our dressing-rooms, but of flexible flint, often more delicate than the finest spun glass. The best known of these is this Venus's flower-basket, or Euplectella, which lives embedded in the mud of the seas of the Philippines, supported by a glass frill standing up round it like a Queen Elizabeth's ruff. In Europe it may be now bought in any curiosity shop, and is one of the most exquisite, both in form and texture, of all natural objects; is often seen as a drawing-room ornament.

EUPODOTIS EDWARDSII. *Gray.*

Otis nigriceps, *Vig.*	Otis lucionensis, *Vieill?*
Tokdar, ... HIND.	Gurrayin of HURRIANA.
Sohun, Guganbher, ,,	Bat-meka, . . . TEL.
Burra chirath, . ,,	Bat-myaka, . . . ,,

This noble bird is 4½ to 5 feet long, and extent

8 feet. It weighs 26 to 28 lbs. It is not known in Bengal, Behar, or the Malabar coast, but seeks the open grassy plains of India. It is becoming very scarce in the cultivated country. In the Mysore country, in 1837, the Editor once raised three or four in a morning ride, to the east of Bangalore; but since 1865 he never raised one in the Peninsula. They are abundant in Rajputana. Their usual food are insects, but they eat reptiles and fruits. They are polygamous, and at the breeding season the male struts about on some eminence, puffing out the feathers of the neck and throat. O. lucionensis of China, it is supposed, may be a distinct species. Other species are—E. nubra, *Ruppel.*, E. Ludwigi, *Rupp.*, E. caffra, *Licht.*, E. Denhami, *Children*, E. Arabs., *L.*, and E. kori, *Burchell.* A species very closely allied to E. Edwardsii is the Otis Australis, *Gray*, the wild turkey of Australia.

EURASIAN, a name applied to the descendants of Europeans and natives of India, also called Indo-Britons and East Indians, all of which terms might advantageously cease to be used, and the race be designated Europeans. Most of them are of Portuguese, Dutch, Danish, French, and Spanish descent. Races with a mixture of European with Asiatic blood possess a proud and susceptible tone of mind. See East Indians.

EUROPA seems to be derived from Su-rupa, SANS., of the beautiful face,—the initial syllable Su and Eu having the same signification in the Sanskrit and Greek languages, viz. good, and Rupa is countenance.—*Tod.*

EUROPE, one of the five great divisions of the world. Its extent from Cape St. Vincent to the mouth of the Cana is nearly 3400 miles; and from Cape Matapan, in Morea, to the North Cape in Lapland, about 2400. Europe is much smaller than either Asia or Africa. It is entirely within the temperate zone, except a small part of Norway and Russia. The inhabitants are all whites. Europe contains Norway, Sweden, Denmark, the Netherlands, France, Germany, Poland, Italy, Spain, Portugal, Hungary, Switzerland, and part of Russia and Turkey; also Great Britain, Ireland, Iceland, with other considerable islands in the Mediterranean and other seas. The languages are the Italian, French, Spanish, and Portuguese, which are dialects of the Latin; the German, Flemish, Dutch, Swedish, Danish, and English, derived from the old Teutonic; the Sclavonian, which prevails, mixed with others, in Poland, Russia, Bohemia, and a great part of Turkey; the Celtic, of which there are dialects in Wales, the Highlands of Scotland, Ireland, Bretagne in France, Biscay in Spain, and Lapland; the modern Greek; and several others. The principal mountains are the Alps, Apennines, and Pyrenees. The prevailing religion is the Christian, divided into the Greek, Romish, and Protestant Churches; Mahomedanism is the established faith of the Turks; and there are Jews in every country.

European, in British India, is usually meant to signify a native of Europe or America, of pure descent, in contradistinction to a native of India, or an East Indian. The Government of India has, as regards the last of these questions, in a late resolution declared Europeans to be 'all persons (in India) of European origin or descent, however remote, who hold to European habits or modes of life.'

EURYA JAPONICA. *Thunb.*

Var. α. E. Thunbergii. | *Var.* γ. E. Chinensis.
Var. β. E. acuminata. | *Var.* δ. E. parviflora.
Hoolooviof NEILGHERRIES. | Neyadasse-gass, . SINGH.

This is a very variable plant, and Colonel Beddome gives, as further synonyms,—E. Wightiana, *Wall.*, E. fasciculata, *Wall.*, E. tristyla, *W. and A. Prod.*, E. Ceylanica, *W. Ill.*, E. elliptica and E. membranacea. It is common on the western side of the Madras Presidency, principally on the mountains at the higher elevations. It grows also in Northern India. Its timber is of a light chocolate brown; in leaf and general appearance it much resembles the tea plant, and is sometimes reared as such in tea plantations. There is only one species in the Madras Presidency. Vars. α, β, and δ grow in the more elevated parts of Ceylon island, up to 8000 feet; δ in exposed situations; var. β from a little above the sea-level, up to an elevation of 5000 feet, very abundant.—*Thw. En. Pl. Zeyl.* i. p. 41; *Beddome, Fl. Sylv.*

EURYALE FEROX. *Salisb.*

Nymphæa stellata, *Willde.* | Anneslea spinosa, *Roxb.*
Kien-shih, Ki-tu, . CHIN. | Juwur, . . . KASH.
Machana, Makhana, HIND. | Nallani padmam, . TEL.

A water-lily with a small bluish purple flower, covered everywhere with prickles, and so closely allied to Victoria regia as to be scarcely generically distinguishable from it. It grows in all S.E. Asia and in Japan. The discoverer of Victoria called the latter Euryale Amazonica, and both these interesting plants grew side by side in the new Victoria house at Kew; but the Chinese species has been erroneously considered different from the Indian one. In China the plant is said to have been in cultivation for upwards of 3000 years. It is much cultivated there for its stems, rhizomes, and seeds, all of which contain much starch, and are eaten by the Chinese, who also prepare a kind of dry biscuit, called kien-shih-kau, from the meal of the kernels. These biscuits are sold by confectioners, and given to children suffering from the kau disease. The fruit is large, of the size of a small orange, pear-shaped, and indehiscent; its interior is white, hard, and starchy, and contains from 8 to 15 round black seeds as large as peas, which are full of flour, and they are eaten roasted in India. This plant is common in the lake of Kashmir. Its broad round leaf lies on the water like that of the lotus, its under surface being covered with numerous hard, sharp, and hooked spiculæ.—*Mrs. Hervey, Tartary; Royle, Him. Bot.* p. 65; *Hooker*, ii. 255; *Thw.; Voigt; Smith.*

EURYANGIUM SUMBUL. *Kaufman.* A plant of Central Asia; yields the true sumbul or musk root.

EURYCLES AMBOINENSIS. *Salisb.*

Cœpa sylvestris, *Rumph.* | Pancratium Amboinense, *L.*
Crinum nervosum, *L. Her.* | Proiphys Amboinensis, *Herb.*
Eur. coronata, *Auct.*

La-men; Næmen, . . BURM.

This plant, one of the Amaryllaceæ, or narcissus tribe, grows in Tenasserim, Borneo, the Moluccas, and other islands. It is called Bunga Si-kudip by the Dyaks of the southern branch of the Sarawak river, amongst whom it is held in great esteem. By the Si-booyah sea Dyaks it is called Si-kenyang. By the Dyaks of the southern river the bulbous roots of this plant are preserved with jealous care, being always taken up when the rice is ripe, and preserved amongst it in the

granaries, to be planted again with the seed-rice in the following season. It bears a beautiful crown of white and fragrant flowers, which rise about a foot above the bulb.—*Low's Sarawak*, pp. 273–304; *Mason*.

EUSUFZAI, an Afghan tribe whose territory is bounded on the S. by the Indus, N. and E. by the Swat mountains, and W. by the Kābul river and the Mehra or desert plateau between it and Hushtnuggur. The tract is intersected on the E. by offshoots from the Swat mountains, but in other parts it is a perfect plain. The inhabitants are proud, warlike, and extremely sensitive in all matters connected with family custom. In the Peshawur district the Eusufzai are of political importance. As soldiers, they are not inferior to any of the independent tribes. They are the most martial of all the British subjects on that frontier, and the history of many generations attests their military exploits. Participators in every war that has convulsed the Peshawur valley, and always the recusant subjects of the Sikhs, they have now literally turned their swords into ploughshares, and are right good subjects of the British. Their customs have been respected, the allowances of the chief and their village headmen have been confirmed. Though constantly tampered with by the Swat government to rebel, they only once yielded to temptation. At the battle of Teree, which gave the sovereignty of Peshawur to the Sikh, the Eusufzai formed the strength of the Mahomedan army, which, numbering 30,000 men, withstood a Sikh force of equal numbers, supported by guns and headed by Ranjit Singh himself. The Eusufzai are democratic and in small communities, with patriarchal government. They are agricultural, lying in warm and fertile valleys, touching the Indus on one side and the Punjkora on the other, extending on the south to Kābul, occupying the northern part of the plain of Peshawur, Bunir, Swat, Punjkora, and Chumla. The Swat, Bunir, Punjkora, and the Eusufzai part of the Kābul valley, are the lands of the Akkozai, the Mullezai, and the Lawezai. The clans of the Eusufzai and Mahmudzai have a system of periodical interchange of lands, called Waish. The numbers of the Eusufzai are estimated at from 700,000 to 900,000 souls, and are of Afghan, Indian, and Kashmir blood, with the old occupants of the land, the Dehkani and Swati. Many Eusufzai have fair complexions, grey eyes, and red beards; are stout and brave, quarrelsome and proud, and those in the plains are very immoral.

The Eusufzai were expelled from Garra and Nushky about the end of the 13th or beginning of the 14th century of the Christian era, and soon after settled in the neighbourhood of Kābul. Ulugh Beg, whose power was at that time strengthened by the accession of many Moghuls, to rid himself of his troublesome allies, began by fomenting dissensions between the Eusufzai and Guggeeani (for the Khukkai had now broken into independent clans), and he soon after attacked them at the head of that tribe and his own army. He was defeated at first, but, having cut off all the chiefs of the tribe at a banquet, during an insidious peace which he had the art to conclude with them, he plundered the Eusufzai of all their possessions, and drove them out of Kābul. The Eusufzai, reduced to extreme distress, took the way to the neighbourhood of Peshawur. That country was then in a very different state from that in which it is at present. The tribes who now possess it were then in Khorasan; and the plain of Peshawur, with several of the neighbouring countries, was occupied by tribes which have since either entirely disappeared, or have changed their seats. Lughmaun was in the hands of the Turkulani, who are now in Bajour; the tribes of Khaibar and the Bungush had already occupied their present lands, but all the lower part of the valley of Kābul, all the plain of Peshawur, with part of Bajour, Chuch, Huzareh, and the countries east of them as far as the Hydaspes, belonged to the Afghan tribe of Dilazak, which is now almost extirpated. The country between the Dilazak and the range of the Hindu Kush, on both sides of the Indus, formed the kingdom of Swat, which was inhabited by a distinct nation, and ruled by sultan Oveiss, whose ancestors had long reigned over that country. On the first arrival of the Eusufzai, they threw themselves on the generosity of the Dilazak, who assigned them the Doabeh for their residence.

Living among a conquered people, like Spartans among Helots, and enjoying entire independence on all around, every Eusufzai is filled with the idea of his own dignity and importance. Their pride appears in the gravity of their manners, and in the high terms in which they speak of themselves and their tribe, not allowing even the Daurani to be their equals.—*Elph. Caboul; Rec. Gov. Ind.*, No. ii. *Parl. Pap. E. I., Caboul and Afgh.*

EUTHYDEMUS has been noticed at p. 222, Bactria. He led the Syrian army through Bactria, *i.e.* by the route N. of the mountains, to the Kābul valley and across the Indus, in B.C. 206. There Antiochus made peace with Sophagasenus (Asoka), which that sovereign recorded by edicts on rocks and pillars in various parts of India, in characters exactly resembling those on the coins of Agathocles. In B.C. 205, Antiochus returned by way of Arachotia. The translation of the edicts of Asoka is in the Asiatic Society's Journal for 1838, and that on the Girnar rock names Antiochus as Antiochia Yona Rajah. Demetrius, son of Euthydemus, obtained possession of Arachosia, and a large portion of Persia; he also made conquests in India, and was in possession not only of Lower Sind, but also of the coast of India, further to the east. He seems, however, to have been excluded from Bactria, of which Eucratides remained master. After the death of Euthydemus, Demetrius made an unsuccessful attempt to dispossess his rival, and in the end lost all his Indian conquests, which were seized by Eucratides. —*Elph.* p. 245.

EVAPORATION. M. Lamairesse mentions that the engineers in the Madras Presidency allow for a loss of water in irrigation by evaporation, of 3 inches daily per square yard of land irrigated. In the Red Hill tank, near Madras, in the five months April to August the water went down 75 inches, in spite of 8 inches of rain, in all 83 inches. Of that, 53 inches were lost by evaporation, and 30 inches used in irrigation. In the years 1864-65, in the same months, at Pondicherry, the mean daily evaporation was 0·329 inch; at Red Hill tank, Madras, in the tank, 0·374, and in the open, 0·469. The depth of the waters, the prevalence of dry winds, and the degree of tree shelter for the waters, exercise great influence over the rates of evaporation. It

is a subject of great importance to India and all tropical countries, but has not been worked out. In his annual report of the Bombay Geographical Society, from May 1849 to August 1850, ix., Dr. Buist, on the authority of Mr. Laidly, stated the evaporation at Calcutta to be about 15 feet annually; that between the Cape and Calcutta it averages, in October and November, nearly ¾ of an inch daily; between 10° and 20° in the Bay of Bengal, it was found to exceed an inch daily. Supposing this to be double the average throughout the year, we should have 18 feet of evaporation annually.—*Beng. Ph.; Maury's Ph. Geog.*

EVE, the mother of the human race, is recognised under different names in all cosmogonies. The Eve of Mosaic history became the Astarte of the Assyrians; Isus nursing Horus of the Egyptians; the Demeter and the Aphrodite of the Greeks; the Scythian Friya and Baltis. The Eve of Genesis is the Hawa or Havvah of the Arab and Mahomedans generally; Baltis, in Byblius called Beuth or Behuth, *i.e.* void of genesis, is identical with space, and means the mother's womb, the primeval mother,—the fundamental idea being the mother or source of life, which is the meaning of Havvah, the Eve of Genesis. The tomb of Eve is pointed out in several places. On the east, Mecca is bounded by a hill called Abu-Kubays, and, according to many Mahomedans, Adam with his wife and son Seth lie buried there. At less than a mile from the Medina gate of Jedda, a tomb, said to be that of our common mother Eve, is surmounted by a cupola and surrounded by walls, enclosing a pretty cemetery, in which many of her children lie around her.—*Bunsen's Egypt; Hamilton, Sinai*, 66.

EVEREST, Rev. Mr., wrote on the Fossil Shells in the Himalayas (As. Res. 1833, xviii. part 2, p. 107); On the Quantity of Water and Mud discharged by the Ganges annually (Prinsep's Gleanings in Science, iii.; Bl. As. Trans. i.; Lyell's Principles of Geology, 8th ed., 1851, p. 241); Rain and Drought of the last Eight Seasons in India, Lond. 1847, 2 vols. 4to, Edin. Rev. on 1841; Geological Observations from Calcutta to Ghazipore (Gleanings in Science, 1831, iii. 131); Experiments and Observations on Quantity of Mud brought down by the Ganges near Ghazipore, with its Depth and Velocity (Bl. As. Trans. 1833, i. 238, p. 549); On the Gypsum of the Himalayas (ibid. 430).—*Dr. Buist's Catalogue.*

EVEREST, MOUNT, the loftiest known peak in the world, situated in the Nepal ranges of the Himalayas, beyond Bengal, lat. 27° 59′ 12″ N., long. 86° 58′ 6″ E. Altitude above the sea, 29,002 feet.

EVERGREENS, trees and plants of the S. and E. of Asia which retain their foliage, consist of species of abies, Cunninghamia, cupressus, ilex, juniperus, thuja, arbutus, aucuba, buxus, laurus, rhamnus, acacia, affinis, eucalyptus, ligustrum, magnolia, berberis, cistus, colletia, cotoncaster, daphne, rhododendron, yucca, bignonia, jasminum, and vinca. Everlasting flowers are flowers which retain their shape and appearance after being dried.

EVIL EYE.

El-eyn, ... Arab.	Mal occhio, Jattatura, It.
Baskanos ophthalmos, Gr.	Drashti dosham, Sansk.
Kako mati, ... ,,	Kan pada, ... Tam.
Chashm-i-bad, . Hind.	Kannu taku, . . . Tel.

The evil eye alluded to in Proverbs xxviii. 22 and Mark vii. 22, is still a subject of dread in all Eastern countries, as well as in many of those of Europe. The Irish and Scotch as much believe that their cattle are subject to an injury from the blight of the evil eye, as did Virgil's shepherd when he exclaims, Nescio quis teneros oculus mihi fascinat agnos. The Greeks of the present day entertain the same horror of their Kako mati as did their ancestors in their Baskanos ophthalmos, and the Mal occhio of modern Italy is the traditional fascinatio of the Romans. Mr. Buckingham relates that, when in Persia, being ill, his companions attributed his sickness to the ill-wishes of a malignant enemy; to remove which, a fakir took some rags from his body and deposited them in the new-made graves of some holy personages, believing that they thus acquired a virtue potent enough to dispel the supposed evil influence. The Arabians and Turks believe in it, and apologise for the profusion of jewels with which they decorate their children, on the plea that they are intended to draw aside the evil eye. The Mahomedans suspend objects from the ceilings of their apartments for the same purpose; and the Singhalese and Hindus place whitened chatties on the gable ends of their houses and in fields, to divert the mysterious influence from their dwellings and crops. The Mahomedans hang round their children's necks, and suspend in their houses, or place over the lintels of their doors, charms consisting of verses of the Koran, which are inscribed by holy men, or incantations by pretended exorcists, written on paper, or engraved on potstone, silver or gold, to guard against the evil eye. And Hindus resort to their temples to make offerings to their deities for the same object. Hindus and Mahomedans alike think that jewels on children tend to attract on the jewels the evil eye. Hindu mothers, when they suspect that the evil eye has fallen on their child from home, on returning to their house, take some chillies and salt in their hands, and describe a circle round the infant's head, and thereafter place the chillies and salt in a well or in the fire, to destroy the evil eye and its charm together. Pretending exorcists, both men and women, also exorcise those blighted with the evil eye, by reciting a charm over cow-dung ashes, and rubbing it on the forehead and body of the child. In Italy, Pope Pius ix. is supposed to have had the evil eye. Popular superstition has generally divided them into two classes,—those who involuntarily and innocently possess the fatal power, and are unconscious of its exercise, and those who knowingly acquire it, and take a delight in exercising it against all who offend them. The maleficent power has been known by several English words. It is to 'eye-bite,' to 'overlook,' and to 'take.' The French and Italians simply call it fascination in the evil sense of the word; the Germans, the Scheelauge, or squint-eye, ascribing the power to a squint; and the Zauberblick, or enchanted glance. To 'take,' in Shakespeare, means to blast or blight by witchcraft. In King Lear, act ii. scene 4, occurs the imprecation, 'Strike her young bone, you taking airs, with lameness.' He says of Herne the Hunter, in The Merry Wives of Windsor, that he 'blasts the tree and takes the cattle, and makes milch kine yield blood.' In Hamlet, speaking of Christmas time, he says,—

'The nights are wholesome, then no planets strike,
No fairy takes, no witch hath power to charm,
So hallowed and so gracious is the time.'

And this meaning, somewhat modified, still holds good amongst English women.

Pliny speaks of 'those among the Triballians and Illyrians who with their very eyesight can kill those whom they look wistfully upon for any long time;' and Plutarch states, on the authority of Philaretus, that 'the Thybiens who inhabited Pontus were deadly not only to babes but to men grown, and that whomsoever their eye, speech, or breath would reach, were sure to fall sick and pine away.'—*Buckingham's Travels*, p. 172; *Milner's Seven Churches*, p. 120; *Burton's City of the Saints*, p. 129; *Sonnerat's Voyage*, p. 89; *Sir J. E. Tennant's Ceylon.* See Somal.

EVOLVULUS ALSINOIDES. *Linn., Roxb.*

Sankh pushpi, . . HIND. | Vishnu kranta, . . TEL.
Vishnu karandi, . TAM.

This, the E. hirsutus, *Lam.*, is common in many parts of India. The different parts of this plant are used in medicine.—*J. L. Stewart, M.D.*

EXACUM BICOLOR, *Roxb.*, has long been used as a bitter tonic. It grows in Cuttack, at Mangalore; rare on the Neilgherries below Kotagherry, and abundant a mile below Nedawuttum, where it flowers during the autumnal months, and enamels the swards of the Western Ghats with its beautiful blossoms. It has the same bitter stomachic principles for which the Gentiana lutea is so much employed. It is sold in Mangalore at 1 anna 6 pie per pound, and is used as a substitute for Andrographis paniculata. —*Roxburgh; Ind. An. Med. Science*, No. 6; *Cleghorn.*

EXACUM TETRAGONUM. *Roxb.* Purple chiretta.

Koochuri, . . . BENG. | Ooda chiretta, . . HIND.

A very elegant plant growing throughout British India. Its large flowers are beautifully blue, with gold-coloured anthers. Other species are E. carinatum, pedunculatum, and teres.—*Roxb.* i. p. 398.

EXCOECARIA AGALLOCHA. *Linn.*

Arbor excoecans, *Rumph, Amb.* ii. 179.

Ugaru, ... BENG. | Gengwa, ... HIND.
Ta yau, Ka yau, . BURM. | Tella keeriya gass, SINGH.
Bouc baya-za, . . ,, | Tella chettu, . . TEL.

This small tree grows in Ceylon, where it is very common in salt swamps near the sea. It grows freely in the Sunderbuns, is plentiful in the Rangoon and Tounghoo districts, and grows through the Eastern Archipelago. The Bengali name, Ugaru, indicates a belief that it yields the fragrant aloe-wood of commerce, but this does not seem to be the case. Dr. O'Shaughnessy at one place says (p. 563) that its wood is knotty, grey or blackish, smooth and resinous. But Dr. M'Clelland describes it as white-coloured, and adapted to every purpose of house-building. The sap is described as extremely acrid, and as causing great agony, if, in cutting down the tree, any of it fall into the eyes. Hence Rumphius' name, Excoecans, or blinding; and this is probably correct, as Rumphius himself became from some cause blind at the early age of 44.—*Thw.; M'Cl.; O'Sh.*

EXCOECARIA JAMETTIA. *Spreng.*

Tiger's milk tree, . ENG. | Kametti, . . . MALEAL.

Grows on the western coast of India. It abounds in an acrid juice, from which a good kind of caoutchouc may be prepared.—*Drury.*

EXCOECARIA OPPOSITIFOLIA. *Jack.* This is E. crenulata, *Wight.* It is a small tree growing in Malabar, on the Animallay Hills, and common in the central province of Ceylon at an elevation of 4000 to 6000 feet.—*Thw.; Jack, Cal. J. Nat. Hist.* iv.

EXCOECARIA SEBIFERA, *J. M.*, syn. of Sapium sebiferum. This is the Chinese tallow tree. The white pulp round the seeds give the Chinese tallow, which is separated by boiling in water, and used in China and Japan for candles; it melts at 104°. The seeds yield an oil, and the leaves a black dye. Wood hard, used for printing blocks.

Other species included are E. acerifolia, baccata, Cochin-chinensis, holophylla, and virgata. The acrid juice or milk of E. insignis, E. Indica, and E. agallocha is poisonous, and the seeds of E. Indica are used to poison fish.

E. insignis is a tree of Kangra, and E. Indica a tree of the Sunderbuns.—*Roxb.; Gamble; Kurz.*

EXIDIA AURICULA JUDÆ. *Fries.* Jew's ear fungus, one of the thallogens, of almost universal growth, and used medicinally. E. hispidula is one of the edible fungi of China.

EXOCARPUS, an inferior kind of sandal-wood, the produce of Exocarpus latifolia, is met with in the Percy Isles, Repulse Bay, Cape Upstart, Palm Islands, etc.

EXOCETUS, a genus of fishes belonging to the abdominal Malacopterygii, forming part of the family Exocideæ. Their pectoral fins are very long, nearly equal to the length of the body. The fish, to escape its enemies, rises into the air, and its pectoral fins vibrate while wet, and re-vibrate as often as they pass through a crest wave, wetting the fins afresh. Some of the fish proceed from 70 to 250 yards. There are several species of the flying fish: Exocetus volitans, *Linn.*; E. solitarius; E. evolans; E. exiliens; E. mesogaster. The E. volitans is usually 10 or 12 inches long, but attains to 15 or 20 inches. Thirty-two seconds is the greatest length of time that their flight has been observed, and distance accomplished 250 yards. They are captured by torchlight in the West Indies.—*Collingwood; Bennett's Gatherings of a Naturalist; Bikmore.*

EXOGAMY, the custom of selecting a wife from a different tribe. Exogamy prevails throughout Western and Eastern Africa, in Circassia, Hindustan, Tartary, Siberia, China, and Australia, as well as in North and South America.—*Lubbock, Orig. of Civil.* p. 99.

EXORCISM is practised very frequently, more especially by the Shanar race of S. India. See Charms; Divination; Evil Eye; Ordeal.

EYES PAINTING, mentioned in 2 Kings ix. 30, Jeremiah iv. 30, Ezekiel xxiii. 40, and tiring of the head are still common in every Eastern country. In painting the eyes, Mahomedans use two substances, lamp-black (koh'l) and grey oxide of antimony; the latter the men use, and the women use lamp-black. But throughout India plumbago is substituted for antimony.

EYRE. General Sir Vincent Eyre, C.B., K.C.S.I., born 22d January 1811; died 1881, at Aix les Bains, Savoy. He served in the Bengal Artillery, 1828. He was at Kābul in the Afghan insurrection in 1841, when he commanded a

detachment of horse artillery, and was severely wounded. He was made a prisoner in the retreat from Kābul. In the Indian mutiny of 1857 he commanded the field forces sent for the relief of Arrah, and was brigadier of artillery at the first relief of Lucknow under Sir Henry Havelock, and at the occupation of Alambagh by Sir James Outram. During the final siege of Lucknow he was in command of the artillery division at Alambagh, and took part in the repulse of an attack on that place in March 1858. He wrote: Military Operations at Caubul, 1842; Prison Sketches, 1843; Metallic Roads, 1856. His defence of Arrah in the revolt of 1857 virtually suppressed the rebellion in Shahabad. He was the founder of the town of Esapur, near Dehra Doon, at the base of the Himalayas.

EYUBI, descendants of Salah-ud-Din, the Saladin of the crusaders. The family are known as the Hasan Keif, and occupy the district of Shirwan. In Mr. Rich's time, the Bey was powerful and independent. Eyub is Job. See Kafra.

EZEKIEL. Not far from the ruins of Babylon, the Majallibah, on the banks of the Euphrates, is a white minaret which marks Ezekiel's tomb. Ezekiel, in the reign of Hophra, while the war between the Assyrians and Egyptians was yet doubtful, foretold the end. He had (ch. xxx.) warned his countrymen that Egypt was to fall in the struggle. The fulfilment of this eloquent threat began with the march of Nebuchadnezzar, and within fifty years of its being uttered it was completed on the conquest by Cambyses. Chapter xvi. 17 and Amos v. 26 are supposed to relate to the god Siva.—*Sharpe's History of Egypt*, i. 159.

EZRA, the prophet scribe, called by the Mahomedans Ozair. According to Mahomedan tradition, Ezra was of the race of Jacob, of the tribe of Levi, and fourteenth in descent from Aaron. They say that the Holy Scriptures, and all the scribes and doctors who could read and interpret them, excepting a few who were taken captive to Babylon, were involved in the destruction of Jerusalem by Nebuchadnezzar. Ezra, who was then very young, was among the captives, and continued to read and teach the law of God to his countrymen during their captivity. At the end of the captivity, Ezra returned to Jerusalem, and some say there, some near Babylon, while he was occupied in weeping over the ruined city and temple of God, he said to himself, 'How can fallen Jerusalem ever rise again!' No sooner had he conceived this thought than God struck him dead, and he remained so for one hundred years, when he was raised again, and employed the rest of his days on earth in explaining the word of God to the Jews. The Christians of the East say that Ezra drank three times of a well in which the holy fire had been hid, and that thus he received the gift of the Holy Ghost, which rendered him capable of re-establishing the Holy Scriptures among his countrymen. About 100 miles above Kurna, on the right bank of the Tigris, is his tomb. It is a pretty mosque of tessellated brickwork, surmounted by a green cupola, and the corners and tops of the tomb are ornamented with large balls of copper gilt.—*Rich's Kurdistan*, ii. p. 390; *Mignan, Travels*, p. 9; *Townsend's Outram and Havelock*, p. 308.

F

F. This English letter has a perfect representative in the Fay of the Arabic, Persian, and Urdu, but has no representative in Sanskrit, Hindi, Mahrati, Gujerati, Bengali, Uriya, Telugu, Karnata, Tamil, and Malayalam. The Mahratta people, however, pronounce it distinctly, the sound of f being given by them to that of the English and Hindi ph. The Mohawks of N. America, as also the Hurons and the tribes called the Six Nations, never articulate with their lips. They have no p, l, m, f, v, or w,—no labials of any kind. In the Society Islands the gutturals are wholly absent; and in China neither the d nor r is used; and g, h, ph, and f in the non-Aryan tongues are often interchanged. F is not in the Singhalese, and the letter p is used instead.

FA-ANG. JAP. The red-wood of Japan.

FAARSI. JAP. A varnish in use in Japan, of an inferior kind, supposed to be from the Rhus vernix, but adulterated with the varnishes of India and Siam.

FABACEÆ, the bean tribe, leguminous plants, of which about 300 known species belong to New Holland and Polynesia, 42 to Japan and China, 12 to Timor, 14 to Persia, 20 to Arabia, and 891 species in the E. Indies and Java, arranged under 133 genera. It comprises 362 genera, and between 3000 and 4000 species, and most of them furnish products useful to man. Peas, beans, clover, saintfoin, lucerne, liquorice, indigo, medicks, and trefoils, lupines, and numerous other common European genera belong to the section Curvembriæ. Many species yield tonics and astringents, others yield a kind of gum, and in a very large number of species, narcotic properties have been discovered. A cassia furnishes the senna leaves of the shops; to this also belong the tamarind and algaroba fruits, the trees yielding logwood, Brazil-wood, sappan-wood, etc., and hymenæa, from which gum-anime is procured. Some of them yield dyes. The locust trees of North America belong to this order, and are celebrated for their gigantic stature. Gum arabic, senegal, sassa, and others are produced by different species. Catechu is the extract of the astringent bark of Acacia catechu; and one of the timbers known in England as rosewood, is said to be the wood of some Mimosa inhabiting the interior of Brazil. One of the most striking phenomena among the plants of this order is the excessive irritability observable in the leaves of certain species of mimosæ, such as M. pudica, M. sensitiva, which are hence called sensitive plants. It is, however, a special peculiarity, and not one of general occurrence,—unless the folding up at night of the leaves of the whole sub-order be regarded as an instance of the same irritable quality in a low degree. Of this family the following are valuable timber trees,—Acacia stipulata, a valuable wood for general purposes; Cassia fistula, a beautiful ornamental tree, yields a wood useful for furniture, naves and spokes of wheels, and tool handles; Inga xylocarpa has a dense wood, resembling Cassia fistula, used for windlasses, block sheaves, and for parts of gun

carriages, but too brittle to resist concussion.—*Major Benson; Voigt.*

FABA VULGARIS. *Mœnch.* Vicia faba, *Linn.*

Pinnis, . . ANGLO-TAM.	Bakla, ... HIND.
Tsan-tau, Hu-tau, CHIN.	Kaiun, . . N.W. HIM.
Common bean, . . ENG.	Chastang, Nakshan, „

This is found wild in the Sutlej valley between Rampur and Sungnam, at an elevation of 8000 to 14,000 feet. Cultivated from time immemorial for food for man and beast as a vegetable, or for the beans, which are ground into flour. The bean and the pea were taken from Central Asia into China by Chang-kien, the ambassador of the Han dynasty. In China they are parched, and largely eaten.—*Stewart; Cleghorn, Panjab Report; Smith.*

FADHLI, an Arab tribe occupying the coast on the N.E. of Aden. They are a proud, martial, and independent race, prone to take offence, vindictive and treacherous, morals lax. Men call themselves after their mothers, as Ban Salma and Zanoo. An illegitimate son is more honoured than one of legitimate birth.—*Prideaux, Arab Tribes.*

FAGARA PIPERITA, the pepper bush of Japan. The leaves as well as the berries have a spicy taste, are heating, and at the same time rather disagreeable to the palate.—*Thunb. Tr.* iii. 62.

FAGONIA CRETICA. *Linn.*

Damahan, Damahar, HIND.	Dhama, Damiya, N.W. H.
Spalaghzai, . N.W. HIM.	Bad-aurd, . . . PERS.

A small spinous weed common in most parts of the Panjab plains, and occurring in Afghanistan to about 3500 feet. The plant is given as a febrifuge and tonic; and Dr. Bellew states that, in the Peshawur valley, it is administered to children as a prophylactic against small-pox. The Hindi and Persian names mean 'carried by the wind.'—*Stewart; Powell*, p. 335.

FAGOPYRUM, a genus of plants of the buckwheat tribe, Polygonaceæ. F. cymosum, *Meissner*, the perennial buckwheat or beech-wheat of the higher elevations of Asia and China, can be used for spinach; leaves yield a blue dye. F. tataricum is of High Asia; and Dr. Stewart thinks there are three species in the N.W. Himalaya. Buckwheat is eaten by Hindus on their fast days. F. triangulare, *Meissner*, ascends to 11,500 feet in the Himalaya.—*Von Mueller.*

FAGOPYRUM EMARGINATUM. *Meissner.*

Palti, ... BHOT.	Ogal, Ugla, . . . KHAS.
Sweet red-flowered buck-wheat, ... ENG.	Phappar, Phulan, . „

This is found in the Sutlej valley between Rampur and Sungnam at 13,000 feet, and at high elevations is cultivated to a great extent. This has reddish flowers, and is generally said to grow lower than P. esculentum, but both are seen on the Sutlej at the same level, about 8500 feet.—*Cleghorn, Panj. Rep.; Stewart.*

FAGOPYRUM ESCULENTUM. *Mœnch.*

F. polygonum, *Smith.*

Bhey, ... BHOT.	Common buckwheat, ENG.
Bitter white or yellow flowered buckwheat, ENG.	Kathu, Bres, . . PANJ.
	Jhaki, ... „

It is found in the Sutlej valley between Rampur and Sungnam at 13,000 feet. This and F. emarginatum are cultivated at high elevations to a great extent. It grows on the worst and poorest soils, and is often sown as food for game. It is a native of Persia and other Asiatic countries, but was introduced into Europe by the crusaders; and in many parts of France, where it is commonly grown, is called Saracen corn. So much is it esteemed in Belgium, that M. Bory St. Vincent says he was shown the tomb of the person who is reported to have first brought it into that country. —*Cleghorn's Panj. Rep.; Powell.*

FAGRÆA, a genus of plants of the natural order Loganaceæ, *Lindl.* F. lanceolata, *Bl.*, is a tree of Penang and Java; F. Malayana, *Mart.*, is a tree of Penang. Dr. Wight in his Icones figures the three species, Coromandeliana, Malabarica, and Zeylanica.

FAGRÆA COROMANDELIANA. *W. Ic.* A small tree with very large showy flowers, common throughout the western forests of the Madras Presidency, from the level of the sea to nearly 6000 feet. It is well worth cultivating for ornament. It may be F. obovata, *Wallich*, a tree of Khassya and Singapore. Gamble notices six species. —*Beddome, Fl. Sylv.* p. 244.

FAGRÆA FRAGRANS. *Roxb.* i. p. 460.

Annah-beng, BURM.?	A-nan, Annan-tha, BURM.?

This evergreen tree grows in Martaban, inland up the Attaran river, is very abundant in Amherst, Tavoy, and Mergui, and in the islands of the Tenasserim coast. Its maximum girth 4 cubits, and maximum length 20-25 feet, but is of so slow growth that the Burmese refer to it in a proverb. When seasoned it sinks in water. It is a compact, yellow, and very beautiful wood, a very hard and excellent timber. It bears a breaking weight of 400 to 500 lbs., and its chief value as a timber is its imperishability when exposed to water or damp. The Teredo navalis will not attack it. Neither heat nor moisture will warp or rot it. It is impervious to the attacks of ants; and the posts of a wharf at Tavoy, which for several years had daily, as the tides flowed and ebbed, been partly dry and partly wet, continued untouched by the worm. It is used for building houses, kyoungs, zyats, etc., as posts for Buddhist edifices, piles for bridges, wharves, etc., but for lay purposes only by the British, as the Burmese regarded it as too good for the laity, and say it ought to be confined to sacred purposes. Hence, as the phoungyes or Burmese priests look on it as a sacred tree, it has been more preserved in the forests of Amherst, Tavoy, and Mergui, than any other valuable wood. It is scattered thickly over the alluvial plains together with Strychnos nux vomica. It has been recommended for railway sleepers.—*Mason; Capt. Dance's Rep.; M'Clelland's Report; Roxb.*

FAHAM TEA, a name given in the Mauritius to the dried leaves of the Angræcum fragrans, a fragrant orchid which owes its odour to the presence of coumarin. The infusion is drunk to promote digestion, and is useful for certain diseases of the lungs.—*Simmonds' Dict.*

FA HIAN, a Chinese Buddhist traveller in India, Khotan (Yu-than), and Tibet, along with Hoci King and other Chinese pilgrims. They reached Yu-than or Khotan in A.D. 399-400. Fa Hian then travelled by Tsu-bo and Yu-hoei and over the Tsu-Ling mountains southwards to Kie-Chha, the modern Ladakh, where he rejoined Hoei King. From Kie-Chha the pilgrims proceeded westward to Tho-ly, which they reached in one month. He passed successively through Kashmir, Kabul, Kandahar, and the Panjab, into the central parts of India, and the country of

Mathura was one of the first in which he entered (Cal. Rev.). He left China A.D. 399. He was six years on his route to Central India, residing at places on his way. He passed six years in India, visited Ceylon, and sailed from there to Java, and returned to China A.D. 415. The silence of Fa Hian and Hiwen Thsang regarding Dehli is a proof of the insignificance of that city from A.D. 400 to 640. His usual place of residence was Chang-au, in the province of Shen-si. On his return he wrote an account of his travels, called Fo-kue-ki, or an account of the Buddhist countries. His journal is very concise, and is chiefly taken up with the description of the sacred spots and objects of his religion; but as he usually gives the bearings and distances of the chief places in his route, his short notices are very valuable. At the time of his visit, Buddhism was still the dominant religion, though Vaishnava doctrines were gaining ground. I-tsing gives a history of fifty-six Chinese Buddhist priests who visited India during the early part of the T'ang dynasty.—*Cal. Rev.; Travels of a Hindoo*, p. 156; *Cunningham's Ancient Geography of India.*

FAILI, a tribe of Kurds, also called Bakhtiari, who dwell in the mountainous part of Kirmanshah. See Kurdistan.

FAIL ZAMIN, amongst the Rajputs, security for good behaviour. Hazir zamin, security for re-appearance.

FAIR, called in India a mela or assemblage, is held periodically at many places. The system exists in full force in Turkestan, north of Hindu Kush. It is not unknown in some parts of the Kābul dominions, and has long been familiar to the natives of India. At the great Dehli fairs, 50,000 persons assemble, some of them from 500 miles' distance. In 1861, at the great solar eclipse, 200,000 persons assembled at Thaneswar in Ambala, some from 1000 miles away. About 130 fairs are held in the Panjab, and the Hindu custom of assembling at shrines, and taking the opportunity of displaying merchandise, prevails throughout India. In Asia they flourish as the only means by which nations distant from each other, and the population of which is often widely spread, can be readily supplied with articles of home and foreign produce. The merchants who carry on the trade from India to Kābul are principally the Povindah or Lohani Afghans, whose country lies westward of the Indus between Dehra Ismail Khan and Kābul. They make annual journeys to and from these places, bringing with them the productions of Afghanistan, and taking back those of India and Europe. They are a race, and require no protection but their own arms. They leave the rugged mountains of the west at Drabund, and assemble at Dehra Ismail Khan, where they dispose of some of their property; others proceed lower down the Indus to Dehra Ghazi Khan, or cross to Multan and Bahawulpur, where their wants in a return supply of goods are sometimes to be procured. Failing this, they pass into India, and even to Calcutta and Bombay. The Lohani and all other traders descend from Bokhara and Kābul about the month of November, and set out on their return in the end of April. In the Russian empire, fairs have been founded in the memory of man, at which business to the amount of 200,000,000 of roubles, or about £10,000,000 sterling, is now transacted, and this is even on the increase. The removal of the great fair of Maccaire to Nijni has only served to give commerce a greater impetus.—*Burnes, in East India Papers, Cabool and Afghanistan*, p. 108.

FAIRY HAIR. ENG. Adiantum capillus Veneris. The Persians give the name of Mu-i-Pari, or Hair of the Fairy, to Saxifraga stenophylla.

FAIZABAD, the capital of Badakhshan. The people are purer Iranians than the Tajak.

FAIZABAD, a town in Oudh, situated in lat. 26° 46′ 45″ N., and long. 82° 11′ 40″ E., on the left bank of the river Gogra, 78 miles east of Lucknow; adjoining it to the west is the modern town of Ajodhya, both towns being on the site of the ancient city of Ajodhya. It gives its name to a revenue division or commissionership of Oudh, with a population (1869) of 2,648,070 Hindus; Mahomedans, 315,604; Christians, 1410. The district consists of a densely populous, well cultivated plain of great fertility, having an average elevation of 350 feet above sea-level. The principal river, and that which affords the chief means of communication between Faizabad and the Gangetic valley, is the Gogra. The early history of Faizabad is that of Ajodhya, of which kingdom it formed a part. Faizabad, two miles and a half in length by one mile in breadth, is built chiefly of materials extracted from the ruins of Ajodhya. The two cities together occupy an area of nearly six square miles, just about one-half of the probable size of the ancient capital of Rama. In Faizabad the only building of any consequence is the stuccoed brick tomb of the old Bhao Begum, whose story was dragged before the public during the famous trial of Warren Hastings. Faizabad was the capital of the first Nawabs of Oudh, but it was deserted by Asaf-ud-Doulah in A.D. 1775.—*Tod's Rajasthan; Williams' Nala.*

FAIZI, the literary title of Shaikh Abu'l Faiz, son of Shaikh Mubarak, and elder brother of Abul Fazl, who lived in the reign of Abkar, emperor of Hindustan. Faizi was presented to Akbar in the 12th year of his reign, and he introduced Abul Fazl six years later, in A.D. 1574. The brothers soon became the intimate friends and inseparable companions of their sovereign. They not only were the confidants of all his new opinions in religion, and his advisers in his patronage of literature, both in foreign countries and in his own, but were consulted and employed in the most important affairs of government. Faizi was sent on a special embassy to the kings of the Dekhan, prior to Akbar's invasion of that region, and Abul Fazl lived to attain the highest military rank, and to hold the office of prime minister. At midnight, when the news was brought to Akbar that Faizi was dying, he hastened to his room, and called out to him, with a familiar term of endearment, 'Shaikh-Ji, I have brought Ali the physician to you; why do you not speak?' Receiving no answer, he threw his turband on the ground, and burst into the strongest expressions of sorrow. On recovering his composure, he went to Abul Fazl, who had withdrawn from the scene of death, and remained for some time endeavouring to console him, before he returned to his palace. Faizi was the first Mahomedan who applied himself to a diligent study of Hindu literature and science. By the aid, and under the direction of the emperor, he conducted a systematic inquiry into every branch of the

knowledge of the Brahmans. He translated from the Sanskrit the Nala and Damyanta, an episode of the Mahabharata; he made a version of the Bija Ganita and Lilawati of Bhaskara Acharya, the best Hindu books on algebra and arithmetic. He wrote a great deal of original poetry and of other works in Persian, and he superintended translations made by other learned men, including one at least of the Vedas, the two great historical and heroic poems the Mahabharata and Ramayana, and the history of Kashmir, the only specimen of that sort of composition in Sanskrit prose. He was directed to translate the Evangelists. He seems to have been more studious and less a man of the world than Abul Fazl. When Abul Fazl was assassinated, Akbar was deeply affected, and passed two days and two nights without food or sleep.—*Elliot; Elph.* p. 468; *Mantakhib u Tawarikh.*

FAKHTAI, a grey colour, probably from Fakhtah, HIND., a dove.

FALCONER, HUGH, a Bengal medical officer, a distinguished palæontologist. He was born at Forres in 1808, and went to India in 1829. He was one of the first botanists who visited Kashmir and Little Tibet, Kamaon, and the Panjab, where he formed magnificent collections, illustrating his specimens with voluminous notes and details of their structure and affinities. He was superintendent of the Botanic Gardens of Saharunpur and Calcutta. He returned to England in 1856 or 1857, and died 31st January 1865. In the latter half of his life, he devoted his time to the study of mammalian palæontology; and, after his death, two volumes of his palæontological memoirs and notes were published by Dr. Murchison. He and Sir T. P. Cautley examined the fossils of the Siwalik Hills; Fauna Antiqua Sivalensis, or the Fossil Fauna of the Siwalik Hills, Cautley and Falconer, Lond. 1845–1846, folio. He wrote an Account of Fossil Bones at Hurdwar, in Bl. As. Trans. 1837, vi. 233; On Elastic Sandstone, ibid. 240; On the Geology of Perim Island, Gulf of Cambay, in Lond. Geol. Trans. 1845, i. 365. Of the many varied subjects treated of in the palæontological memoirs, there are several of great interest even to the general reader. His investigations have shown that, at a period geologically recent, the present Peninsula of India was a triangular island, bounded on each side by the Eastern and Western Ghats, converging to Cape Comorin, while the base of the triangle was formed by the Vindhya mountain range, from which an irregular spur (forming the Aravalli mountains) extended northwards; while between the northern shore of this island and a hilly country, which is now the Himalaya mountains, ran a narrow ocean strait. The bed of this strait became covered with débris from the adjacent Himalaya on its northern shore, and with this débris became entombed and preserved many and various animal remains. The present condition of the country has been produced by an upheaval of the land, so that what was the ocean strait forms now the plains of India,—the long, nearly level valleys in which flows the Ganges and the Indus. Besides this, a great upheavement along the line of the Himalaya has elevated a narrow belt of the plains into the Siwalik Hills (determined to be but of tertiary age), and added many thousand feet to the height of the Himalaya. In the Siwalik explorations, Dr. Falconer and Sir T. P. Cautley discovered the sivatherium, a gigantic four-horned ruminant-like animal, considered by Dr. Falconer to have been furnished with a trunk like the tapir; also certain fossil apes, the first ever discovered, and a gigantic tortoise, Colossochelys atlas, a description of which was communicated to the Zoological Society in the year 1844.

FALCONERIA INSIGNIS. *Royle.*

Excoecaria insignis, *Mull.*

Karalla, Bilodar,	BEAS.	Lodar of . . .	KANGRA.
Ankhar	,,	Biloja, ...	SUTLEJ.

This tree only extends scantily along the Panjab Siwalik tract as far as the Beas. The wood is occasionally employed for domestic purposes, but is of no special use. F. Malabarica, *Wight*, is a synonym of F. insignis.—*Royle, Ill.; Stewart.*

FALCONERIA WALLICHIANA, *Royle*, a tree of Nepal.

FALCONIDÆ, a family of birds of the order Raptores, comprising the sub-families Accipitrinæ, Aquilinæ, Buteoninæ, Falconinæ, and Milvinæ. With five or six exceptions only, the whole of the European diurnal birds of prey are met with in India, many of them being much commoner in that country, and they are associated with numerous other species unknown in Europe. The true Falco peregrinus is common in India, together with F. peregrinator, which would otherwise be regarded its Indian counterpart. The shangar of Indian falconry seems to denote it as a bird of excessively rare occurrence in the Panjab. The Falconinæ are the True Falcons, and those of the south and east of Asia are as under:—

a. Peregrines, viz.

Falco peregrinus, *Gmel.*, peregrine falcon, Bhairi.
F. peregrinator, *Sundevall*, the Shahin or royal falcon.

b. Lanners, viz.

Falco sacer, *Schlegel*, the Saker or cherrug falcon.
F. jugger, *Gray*, the Laggar falcon.
F. Babylonicus, *Gurney*, red-headed lanner.
Hierofalco, *sp.*, of Kaup, the Shankar or Shangar; is brought from northern countries.

c. Hobbies, viz.

Hypotriorchis subbuteo, *Linn.*, the hobby.
H. severus, *Horsf.*, the Indian hobby.

d. Merlins, viz.

Hypotriorchis œsalon, *Gmel.*, the merlin.
H. chicquera, *Daud.*, Turumti, red-headed merlin.

e. Kestrels.

Tinnunculus alaudarius, *Briss.*, the kestrel.
Erythropus cenchris, *Naum*, the lesser kestrel.

f. Falcons.

E. vespertinus, *Linn.*, the red-legged falcon.
Hierax eutolmos, *Hodgs.*, the white-naped pigmy falcon.
H. melanoleucos, *Blyth*, from Assam.
H. cærulescens of Java and Malayana.
H. erythrogenys, *Vigors*, from the Philippines, and H. sericens from China.—*Jerd.* i. p. 20. See Hawking.

FALITA. HIND. A slow match; also, amongst Mahomedans, a lamp charm. Slow match is made generally, if for matchlocks, of the air-roots of the Bar tree; and if for cannon, of thread soaked in powder and spirits of wine.

FALLOPIA NERVOSA. *Lour.* The Kai-pou-yeh and Hau-shan-ch'a of the Chinese, a tall shrub of Macao and Canton, furnishing a tea-leaf. —*Smith.*

FALLOW-DEER of Deut. xiv. 5, 1 Kings iv. 23, called in Hebrew yachmar or red, is supposed to be the Bakkar-ul-wash of the modern Arabs, a kind of antelope.

FALODEH. PUSHT. A white jelly strained from wheat, and in spring-time, in Kabúl, drunk with sherbet and snow.

FALSA. Hind. Grewia Asiatica; also its acid berry, used to make a sherbet.

FALSAR. Hind. of Kotah. Fibrous ginger, the inferior sort.

FALSE POINT, in Cuttack, is a low and wooded headland, and has a lighthouse 120 feet above the water. It is in lat. 20° 20′ 10″ N., long. 86° 46′ 25″ E. False Point harbour, at the mouth of the Mahanadi, is the most sheltered anchorage on the E. coast of the Peninsula of India.

FALUS. Ar., Pers., Hind. A small copper coin, of varying weight and value, current in Arabia and Persia. Sometimes applied to the paisa of India. Also a copper coin formerly current in Madras, equal to five kas or cash.—*W.*

FAMINES.

Qahat, ... Arab.	Hambre, ... Sp.
Hunger-snoth, . . Ger.	Achlik, ... Turk.
Carestia, ... It.	

Famines have repeatedly occurred in S. Asia and in India, owing to the failure of rain, but occasionally aggravated by wars, necessitating an interruption to agricultural operations, and rendered longer distressing by succeeding swarms of insects and rats.

The Rev. Robert Everest seems to have been the first who adduced facts to show that unfavourable seasons in India are periodical. In the report on the Bengal famine of 1860-61, Colonel Baird Smith recommended irrigation, and remarked on the rough periodicity of famines, and it may be said that local famines recur in one part of the country or other every 5, 10, or 15 years, and greater famines occur in successive centuries, at intervals of 50, 100, and 150 years. Dr. W. W. Hunter, about the year 1877, mentioned that the years of famine in the Madras Presidency had been 1811, 1824, 1833, 1854, 1866, and 1877, there being deficient rainfall in preceding years. The years 1810 and 1823 were years of minimum sun spots; 1832 was a year preceding minimum sun spots; 1853 was the third, and 1865 and 1876 were the second, years preceding minimum sun spots. The average rainfall in Madras from 1813 to 1876 was 48·51 inches, and in all the famine years the rainfall was far below the average. And, from the occurrence of sun spots and of rainfall, between the years 1813 and 1876, he arrived at the conclusion that the minimum period in the cycle of sun spots has been a period of regularly recurring and strongly-marked drought in S. India.

In the past 109 years, 21 famines and scarcities are recorded, making a proportion of two bad seasons to seven good. Of the greater famines there have been eight at intervals which have reached 12 years. Five have afflicted the 19th century, and have affected 202 millions of people. The practical result is that the Indian Government must be prepared for a drought followed by severe distress every twelve years, though an extreme famine may not ravage any one province oftener than once in fifty years. There seems some tendency for a bad year in the north to follow immediately a bad year in the south.

Great famines devastated the N.W. Provinces in 1770, 1783, 1803, 1819, 1837, 1861, and 1877. Droughts of less importance visited the same regions in 1733, 1744, 1752, 1790, 1813, 1826, 1833, and 1873. The less serious droughts occurred at intervals of 6 or 8 years; but at intervals ranging from 13 to 24 years the failures of rainfall have been sufficient to involve a bad famine. Each of the great famines was preluded by years of climatic irregularity, especially noticeable in the case of the famines of 1803, 1837, and 1861; the same phenomenon announced the advent of the dearth in 1877 in the N.W. Provinces.

Famines have been recurring in Asia from the most ancient times. That one mentioned as of the time of Abraham, was about B.C. 2247; that in Genesis xlii., which led to the sojourn of the Israelites in Egypt, was about 500 years later.

503-443 B.C. ? In India, during the reign of the emperor Jye-chand, there was great pestilence and famine.
331 A.D. Antioch, a bushel of wheat was sold for 400 pieces of silver.
336. Syria, famine and plague.
381. Antioch, famine and plague during reign of emperor Theodosius the Great.
1022. India, during the reign of Musnood I., great drought followed by famine; whole countries depopulated.
1052-1060. Seven years' drought in Ghor; the earth was burned up, and many men and animals perished.
1215. Famine of a severe kind is said to have lasted from Samvat 1204 (A.D. 1148) to Samvat 1215.
1291. A terrible famine about Dehli, from drought.
1299. Persia ravaged by pestilence and famine.
1337. China, a famine and pestilence.
1342. Famine in Dehli, very severe.
1344-45. Famine over all Hindustan; very severe in the Dekhan; the emperor Muhammad was unable to obtain the necessaries for his household.
1412-13. In the Ganges, Jumna, Doab, great drought, followed by famine.
1471. Famine in Orissa. There is vague mention of great famines in the 13th, 14th, and 15th centuries, notably one in 1471.
1491. A great dearth in Hindustan about this date.
1521. A very general famine in Sind.
1540-43. A general famine in Sind during these years.
1581. Persia desolated by famine and plague.
1598. In Pegu, very severe.
1630. The records of the East India Company mention a severe famine in Surat in A.D. 1630.
1631. Famine in India general by drought and war, and throughout Asia.

There seems to be no doubt that one of the great historical famines affected India about the year 1631, in the reign of Shah Jahan. During the wars in the Dekhan which that ruler carried on against the Murtazza Nizam Shah of Ahmadnaggur, Muhammad Adal Shah of Bijapur, and Kutub Shah of Golconda, a destructive famine desolated the Dekhan. It began from a failure of the periodical rains of 1629, and was raised to a frightful pitch by a recurrence of the same misfortune in 1630. Thousands of people emigrated, and many perished before they reached more favoured provinces; vast numbers died at home; whole districts were depopulated, and some had not recovered at the end of forty years. The famine was accompanied by a total want of forage and by the death of all the cattle; and the miseries of the people were completed by a pestilence, such as is usually the consequence of the other calamities.

1661 A.D. Dow mentions a severe famine in the Moghul empire in A.D. 1661, caused by drought.
1703. In the Thar and Parkar districts of Sind.
1733. In the N.W. Provinces.
1739. Dehli and neighbourhood.
1745. In the Nara, Thar, and Parkar districts.
1770. Bengal suffered in the year 1770 from famine, more widespread and terrible than any which had ever befallen any other British possession, and which Colonel Baird Smith deemed to have been the most intense that India ever had experienced, and one-third of all Bengal lay waste and silent for twenty years.

The crops of December 1768 and August 1769 were both scanty, and prices became very high; and throughout the month of October 1769 hardly a drop of rain fell. The usual refreshing showers of January to May also failed in 1770, in which year until late in May scarcely any rain fell. The famine was felt in all the northern parts of Bengal as early as November 1769, but by the 4th January 1770 the daily deaths from starvation in Patna were up to 50; and before the end of May, 150. The tanks were dried up, and the springs had ceased to reach the surface, and before the end of April 1770 famine had spread desolation. In Murshidabad, at length, the dead were left uninterred; dogs, jackals, and vultures were the sole scavengers. Three millions of people were supposed to have perished. It is also said that within the first nine months of 1770, one-third of the entire population of Lower Bengal perished for want of food. According to Grant, one-fifth of the entire population perished; according to Mill, five-eighths; while Ward and Marshman state one-third. The year 1770 corresponds to the Bengali year 1276, and it is known to this day amongst the people as the Che'hattar Saler Durbhikya Manwantara. It was during the governorship of Mr. Cartier; his Government did nothing to help the people, and the Company's servants trafficked in grain. The executive civil administration was conducted by native officials, who temporarily remitted £8000 of rent. Another famine occurred in Bengal in A.D. 1783, and again in 1788.

1781-83. A.D. Famine and scarcity in Karnatic and Madras districts, caused by the incursions of Hyder Ali. Dearths and famines again recurred in S. India in 1802-4, 1807, 1812, 1824, 1833, 1854, 1866, and 1877.

1782-84. In the Thar and Parkar districts, caused by a burning of crops and suspension of cultivation during the hostilities between the Kulhora and Talpur dynasties.

1783. About A.D. 1783, the Gukkar nation of the Hazara district suffered from a severe famine.

1783-84. In the N.W. Provinces of the Panjab was great drought in 1781, 1782, and 1783; and in October 1783 a terrible famine occurred in all the countries from beyond Lahore to Karumnasa, the western boundary of Behar. The famine had been already felt in all the western districts towards Dehli; to the north of Calcutta, the crops had been nearly burned up.

1785. A million of people are said to have died of famine in the Panjab.

1787-88. Famine prospects in Behar and N.W. Provinces from excess of rain and floods. Export of grain prohibited.

There have been four famines in Ganjam within historical recollection; the first, 1789 to 1792; second, 1799 to 1801; third in 1836; and the fourth in 1865–1866. Of these, the first was the most severe, far surpassing in intensity that of 1866. In the third period of scarcity in Ganjam, in 1836, cholera was very prevalent, and many of the cattle also perished. The great famine which desolated Bengal, 1770-72, did not extend to Ganjam. The extent of the famine of 1791-92 is not anywhere exactly given.

1790-91 A.D. A very severe famine in Baroda and adjoining districts; many people emigrated, others destroyed themselves, some ate their own children.

1791. In Cutch, a famine was caused by innumerable black ants, which almost destroyed vegetation.

1790-92. Serious dearth in the northern districts of the Madras Presidency from November 1790 to November 1792; many deaths from starvation; grain exports from Tanjore prohibited, and Government distributed rice.

1802-4. Famine in the Nizam's dominions. In Cutch, the crops were destroyed by locusts; in Pahlunpur, Rewa Kanta, Surat, Gujerat, Hyderabad, Belgaum and Ratnagherry, by want of rain. Kandesh was overrun by the armies of Holkar and the Pindaris, and famine raged in Ahmadnaggur, Poona, and Sholapur; and in Satara, Kolhapur, Dharwar, and Colaba the great multitude of starving immigrants caused scarcity.

1804-7. In the Bombay Presidency, 1804 was an unfavourable season, and the following year a general failure of crops occurred; famine was severe about Poona and Ahmadnaggur, and the scarcity did not cease till October 1807.

1812-13. In 1810 flights of locusts had appeared in the Bengal provinces, from which they passed through the southern parts of Hindustan, and in fifteen months they arrived in Marwar. In 1811 the annual rain failed in Marwar, and the locusts entered Patan, in the N.W. of Gujerat, and from thence scoured Kattyawar, and on one occasion they appeared as far south as Broach, but they disappeared with the beginning of the monsoon of 1812. The destruction was deplorable, and the mortality amongst the Gujerat people and the immigrants from Marwar was immense.

1812-13. Famine prevailed in parts of Sind, Cutch, Palanpur, Gujerat, Ahmadabad, Mahikanta, Kattyawar, and Broach. In Cutch and Palanpur and Broach it was aggravated by locusts. In Kattyawar it was followed by a plague of rats; Ahmadabad was overrun by starving immigrants, and that in Gujerat was increased by the exportation of grain.

1812-14. In Madras Presidency, considerable scarcity.

1813-14. In many parts of the Agra district the 1812 autumn crop failed, and the spring harvest of 1813 was indifferent, and this was followed by excessive rain.

1819-20. Bundelkhand kharif crop failed, and frost nipped the spring crops of 1820.

1819. Failure of crops in Ahmadabad and Sawuntwari, caused by excessive rains.

1819. In Nagpur, the price of jowari rose from Rs. 5 to Rs. 30 per candy (As. Journ. 1820, ix. p. 79).

1820-22. Partial drought in Upper Sind, causing famine.

1824-25. Famine in Dehli and neighbouring provinces of Hindustan, in the Karnatic and western districts of the Peninsula.

1825-26. In the N.W. Provinces, Saugor, Nerbadda, from want of rain, caused by blight and thunder-storms.

1827-28. In parts of Hindustan, in the Rania and Sirsa parganas.

1831-32. In Poona and the S. Mahratta country and Madras; and Gerrard gave an account of a famine at Herat in 1832, when 25,000 persons perished (in As. Journ., new series, vol. xiii. part 2, p. 165).

1833-34. In some of the N.W. Provinces; in Ajmir not one shower fell in 1832. In 1833, drought severe in Bundelkhand and Cawnpur.

1833-34. In famine in Bundelkhand in 1834, 600 persons died (As. Journ., new series, vol. xvi.). That of 1837 was noticed, vol. xxvi. part 1, and that in 1838 in vol. xxvii. part 1.

In 1824, 1830, and 1831, Madras town suffered from dearths, approaching to famine. In 1766 the British had acquired possession of the delta of the Kistna or Krishna river, and from that time for eighty years famines repeatedly occurred, destroying the people. That which occurred in Guntur in 1833 was described by Captain Best. In this famine 150,000 human beings died of starvation, also 74,000 bullocks, 159,000 milk cattle, and 300,000 sheep and goats. The loss of revenue occasioned to Government during the 15 following years exceeded two and a half millions sterling (Mad. Lit. Trans. 1844, No. 30, p. 186; As. Journ., new series, vol. xiii.). The famine of 1833 extended southwards to Madras, where its severity

was intensified from January to September 1833 by the arrival of thousands, and at one time 59,817 starving people were fed.

1834. In Cutch, Ahmadabad, caused by locusts.

1835. In Broach, caused by excessive rain.

In 1838 a famine occurred in the N.W. Provinces. In 1837 the autumn harvest was scant, owing to insufficient rainfall, and the spring harvest wholly failed from want of rain, and many emigrated, and the cattle perished. Government alone gave in cash Rs. 44,000, but remitted and abandoned revenue to 17 lakhs.

In the famine year of 1837–38, the gross value of the crops saved by the waters of the Jumna canal was estimated at £1,462,800, of which about one-tenth was paid to Government as land and water rent, while the remainder supported the inhabitants of nearly 500 villages.

1838-39. Scarcity and distress in Surat and other Bombay districts, caused by failure of rains.

1853-54. Great scarcity in Bellary district, caused by failure of 1853 rains.

1860-61. In 1859-60 the Dehli territory suffered from want of rain; the 1860 rains completely failed between the Jumna and the Sutlej, from Peshawur to Cawnpur, a range of 800 miles, and an area of 25,000 square miles. Great Britain subscribed £108,090.

1861-62. Scarcity in Cutch and other Bombay districts from failure of 1861 rains, and short fall in early part of 1862.

1866. Awful famine occurred in Orissa from drought, and the lower parts of Bengal and Behar also suffered.

The rains of 1865 were scanty throughout the lower provinces of Bengal and on part of the Madras coast, and in Orissa they ceased on the 14th September. In Orissa the total fall was much below the average, and prices rose to famine rates, and in Balasore and Midnapur grain robberies became frequent. Orissa, 200 miles long, has an area of 8518 square miles, and before the famine its population was estimated at 3,015,826, of whom 814,469 perished and 115,028 emigrated. The deaths were 27 per cent. Of these victims a very large proportion perished in the north-eastern districts of the province. In the Madras division of the country the mortality was lessened by successful measures; and it is estimated, therefore, with only too much probability, that in some parts of the Bengal division three-fourths of the entire population had been swept away. During the scarcity and famine in Orissa, in Nuddea, and Midnapur, the starving people fled to Calcutta, where not fewer than 20,000 people were at one time fed daily. The two earlier famines of 1789 and 1800 began in the north of the Ganjam district, and increased in intensity towards the south; whilst that of 1866, as in 1866, was felt with greatest severity in Orissa and parts of the district adjacent to Bengal. Cuttack, Puri, and Balasore were the three districts of Orissa—omitting the hill tracts—in which the famine raged with greatest intensity, and continued longest. Mohurbhunj is a very large territory, covering an area of upwards of 4000 square miles, and the greater part of this tract was included in the area of most severe suffering. In Chutia Nagpur, in which are the districts of Manbhum and Singbhum, the mortality for the famine of 1866 fell on the population about the same as in Orissa.

In 1868 a severe drought prevailed over all Rajputana, the Central Provinces, the N.W. Provinces, including Meerut and Dehli. The harvest of 1867 was scant, and that of 1868 failed. Rajputana, with its area of desert and its scanty water supply, was most afflicted. It is usual in times of scarcity for the population of the more arid districts to migrate to the more fertile states, but on this occasion all were alike parched by the drought, which was the most calamitous on record. Thousands of the famine-stricken poured into British territory in search of food, greatly aggravating the burden already felt there. In the Central Provinces, the drought, though less severe, was general. The northern parts of the N.W. Provinces, and those bordering on Rajputana, suffered most; in the Panjab, those south of the Sutlej. The famine of 1868, in Rajputana, in severity surpassed that of 1813, which was the most calamitous in Rajputana of which they had record. It was most severely felt in Marwar, the northern portion of which was deserted.

1871-72. An intense famine prevailed in Persia. The harvests of 1869, 1870, and 1871 proved deficient from various causes. The slight fall of rain had diminished the natural reservoirs, and many of the invaluable subterranean canals fell dry. The Persian population live much on fruit, but at Isfahan the fruit harvest was a failure. Thus cereals, water, and fruit were cut of.

1874. Bengal suffered from drought. In 1871 the rainfall had been excessive, but in 1872 it was deficient.

In 1873, also, in Bengal and Behar, the autumn rains were scanty, and in 1874 frost and west winds dried up the crops. In those two districts a scarcity of rice occurred. Sir George Campbell, then Lieut.-Governor, Sir Richard Temple, and the Viceroy, Lord Northbrook, arranged for the importation of rice, of which half a million of tons were poured into the districts where scarcity prevailed, obtained from the Panjab, N.W. Provinces, Madras, and Burma; the last-named district alone sent 289,534 tons. Fifty miles of railroad were constructed at the rate of a mile a day; military officers were employed to aid in the distribution, private charity largely aided, and hardly twenty persons died. The population in reality lived on other grains and pulses. But it cost the Government about nine millions sterling. Macaulay, noticing the former famine there, says —'In the summer of 1770 the rains failed; the earth was parched up, the tanks were empty, the rivers shrank within their beds; and a famine, such as is known only in countries where every household depends for support on its own little patch of cultivation, filled the whole valley of the Ganges with misery and death. Tender and delicate women, whose veils had never been lifted before the public gaze, came forth from the inner chambers in which Eastern jealousy had kept watch over their beauty, threw themselves on the earth before the passers-by, and with loud wailings implored a handful of rice for their children. The Hoogly every day rolled down thousands of corpses close to the porticoes and gardens of the English conquerors. The very streets of Calcutta were blocked up by the dying and the dead. The lean and feeble survivors had not energy enough to bear the bodies of their kindred to the funeral pile or to the holy river, or even to scare away the jackals and vultures who fed on human remains in the face of day.'

1874-75. Severe famine in Asia Minor; the deaths up to July 1874 were 150,000.

1877-78. One of the most severe and most extended famines on record occurred in the Peninsula of India, in the Madras Presidency, Mysore, part of the Bombay Presidency, and lasting from the end of 1876 till the middle of 1878.

The 1876 S.W. monsoon rains were deficient all over the Madras Presidency and in the Poona district, and the N.E. rains utterly failed. The drought in Bombay extended to nine districts in the Dekhan and Southern Mahratta country, including Kandesh, Nasik, Ahmadnaggur, Poona, Sholapur, Satara, Kaladgi, Belgaum, and Dharwar; and adjoining native states, Kolhapur, Phultun, Akulkote, and Sawuntwari, also suffered. The area of this territory, exclusive of native states, comprises about 54,000 square miles, and the total population amounts to eight millions, of which five millions were included in the tracts immediately affected. By October 1876 all the nine of the Bombay Dekhan districts were threatened with famine, as nearly all the monsoon crops had perished, and the spring and summer rains failed, and rain fell short all over India; there were scarce rains also in Egypt, Morocco, and Brazil. In Madras famine affected the districts of Cuddapah, Bellary, Nellore, Kurnool, Madura, North Arcot, Salem, Chingleput, Coimbatore, Kistna, Trichinopoly, and Tanjore. In Mysore, and also some part of the Nizam's country, the area of the distressed districts amounted approximately to 80,000 square miles, and the total population affected to nearly 18 millions.

In the beginning of 1878, a trial census was taken of the districts of N. Arcot, Bellary, Chingleput, Coimbatore, Cuddapah, Kistna, Kurnool, Madras town, Madura, Nellore, and Salem. In these, in 1875-76, the deaths were 340,545; but in 1876-77 they increased to 925,103, or 67 per thousand of the population of 13,765,165. According to the estimated population at the end of 1876, the losses were in Bellary 21 per cent.; Kurnool, 27 per cent.; Cuddapah, 26 per cent.; Nellore, 21 per cent; Coimbatore, 17 per cent.; Chingleput, 10 per cent. The Salem district estimated population in 1876 was 2,129,850. The actual population on the 14th of March 1878 was 1,559,876,—that is, there were 569,956 souls in this one district, or nearly 27 per cent. of the people, unaccounted for. And in this Salem district the famine distress was not then over.

In Mysore the January census showed that about 25 per cent., or one-fourth, of the population had melted away, equal to 1,250,000 souls.

In Bombay the average deaths had been 32,909; but in the year 1876-77 the mortality was 149,053, and there were 32,054 diminished births.

In Oudh, the N.W. Provinces, the Panjab, and Central Provinces, the deaths were abnormally great.

Great efforts were made to relieve the famine-stricken. The people of Great Britain subscribed about £800,000; the Government of India laid out about £10,000,000; and private individuals and the public servants in India vied with each other in efforts to save life.

The loss in cattle was very great. In Bellary the Madras Board of Revenue considered it unlikely that more than 25 per cent. of non-agricultural cattle, and from 60 to 70 per cent. of the agricultural cattle, would survive.

1877-78. An appalling famine prevailed in the N.E. parts of China, chiefly in the provinces of Shan-si and Ho-nan; out of a population of 70 millions, 9 millions of people were reported to be destitute, and 7 million persons in all are computed to have died. The province of Shan-si alone is said to have lost 500,000 inhabitants in one winter. Women, girls, and boys were sold in the market for 2 to 5 dollars each, and many killed their children and then themselves. It was severest inland from the Yang-tze to near Pekin, and east to Corea. In Shan-si, in 1877, the dead could not get a burial; they were too many, and none could afford the expense, so they were cast daily into large pits. The people at Shan-si, in 1878, were said to be living on the corpses of their fellow-beings who died of starvation! And the strong were killing the weak for the sake of obtaining their flesh for food. It was accompanied by locusts.

In Kashmir, also, through the year 1878 it was very severe. The last previous famine in this state was about the middle of the 18th century.

1879. The swarms of rats which from January to March swept through the country between Sind and Madras, are stated by a contemporary to have destroyed quite 50 per cent. of the crops in the agricultural land which they passed over. The length of their journey was not less than 1000 miles.

Sir Arthur Cotton estimated that two acres of rice land will feed seven people for a year; and Mr. Fischer considered that a family of five will consume under 6 lbs. of grain per diem. The fields of India yield abundance of the finer grains, such as rice and wheat, but, except in Burma, these are used only by the well-to-do classes, the producers living on the coarser grains, pulses, and millets. And food at three times its ordinary price, at a season when some months must elapse without relief, means famine in the great majority of cases; while in some cases famine comes long before that rate is reached. When the rate rises to four times the ordinary standard, it is probably accompanied by famine of a very severe description. After the 1877-78 famine in India, a commission was appointed to report how 'Government might by its action diminish the severity of famines.' They calculated that India regularly yields a surplus of food, more than enough to supply a dearth in any particular district. But they avowed their conviction of the incapacity of 'any human endeavours altogether to prevent an increase of mortality during a severe famine.' In 1873 alone, an outlay of six millions and a half sterling averted an increase of mortality. But with the solitary exception of 1873, famine in India has been too strong for the State to bar its devastations. For a famine at Cawnpur, a million and a half sterling of subscriptions was realized and distributed; 1300 were fed daily, but 1200 persons died.

A larger proportionate expenditure was made by the State on the relief of the famine in Orissa in 1866 than on any previous occasion, yet nearly a million persons died.

By the famine of 1868-69 in the N.W. Provinces and the Panjab, and by the diseases which are the followers of famine, though enormous sums were spent on relief, 1,200,000 lives were lost.

Unless when a region is dependent upon rain for its fertility, and the rainfall fails, the soil in India yields the husbandman his fair return. In Sind the rainfall is always meagre. So Sind has learned to trust to artificial irrigation from the Indus, and Sind is safe from famine. Assam and Burma, the country between the Western Ghats and the sea,

the tract immediately east of the Ghats, the valleys of the Nerbadda and the Tapti, enjoy rains or river floods, which have never deserted them. Eastern Bengal, in the parts between the Ganges and the Jumna, is now completely protected by its irrigation canals. It is the portion of India with a total average rainfall from 20 to 35 inches which is subject to drought when the south-west monsoon fails, and consequently is the prey of famine. No past famine has been more intense than that of 1876–78, so none may exceed it in the future. On that presumption, the largest population likely to be severely affected by famine at one time is put at 30 millions. An estimate for relief on a scale double that given in Madras and Bombay during the last famine, shows four and a half millions as the maximum number of objects of relief in the height of the famine, and from two to two and a half millions as needing aid for the space continuously of a year. For each working adult male of this mass the commissioners compute that a pound and a half of flour or rice is sufficient; for a man doing light work, a pound and a quarter; and for a man doing none, still less. A woman needs rather less than a man, and children from half to a quarter the quantity, according to age. The commissioners recommended that for all who can work, public work should be provided, at fixed reasonable wages, the same for all, and 'on which life and health can be maintained.' Piece-work, unless as an experiment, they refused to recommend. The works selected should be of permanent utility, and contiguous to the dwellings of those to be employed upon them. The true policy is to begin a series of comprehensive or connected undertakings of permanent utility, and to entrust their construction to professional engineers, who shall take care that none but the able be employed, and that they be paid regularly in money for a fair day's work. An unfinished canal in Orissa in 1871–72 sufficed to irrigate 100,000 acres, on which 750,000 cwt. of rice was grown.

The impression generally prevailing, that the preservation of life by Government measures of relief in Indian famines, is entirely a question of money, is erroneous. The same atmospheric conditions which produce a scarcity of food, produce also epidemic diseases; secondly, a larger proportion of the mortality of a famine season is due to epidemic diseases than to absolute deficiency of food, although their destructiveness is increased by the people being, from want, less able to withstand them; and thirdly, a point in the process of chronic starvation, when nutriment can no longer save life, is often reached before the people can obtain, or will seek, relief at a distance from their homes. After the famine of 1877, the Indian Government endeavoured to ascertain approximately the deaths it had caused, and by enumerating certain districts, with the following result:—

District.	Normal Death-rate. Average of 5 years.	Deaths in 1877–78.	Percentage of Increase.
Salem from Dec. 1876 up to Feby. 1878,	63,183	204,019	222·8
Bellary (Gooty),	4,405	17,067	278·4
Kurnool (Nundikotkur),	3,039	16,261	435·0
Cuddapah (Madanapilly),	4,490	16,095	260·4
Nellore (Gudur),	1,985	6,173	210·3
Coimbatore (Palladam),	5,110	14,099	175·9
Pondicherry (Ponerl),	2,776	7,160	157·9

The immediate effects of famine soon disappear. An Indian population grows normally at the rate of 1½ per cent. per annum, and this proportion is within the mark in ordinary times. And within two years of the great famine of 1877–78 its injuries were no longer apparent, while calamities of other kinds continue to be remembered for long periods.—*Army Sanitary Comm. Rep.*; *As. Soc. Journ.*; *As. Res.*; *Hunter's Rural Life in Bengal*; *Famine Comm. Rep.*; *India Administration Rep.*, vol. xii.; *Proceedings of the Government of India*; *Saturday Review*, 1878; *Sanitary Commissioner of Madras, Report*; *Dr. W. W. Hunter in Geog. Magazine*; *Montgomery Martin's Famine Chronology*, 1640 *to* 1841; *Statistical Journal*, 1843, i. 3d series, p. 468; *Macmillan's Magazine*; *Geog. Mag.*, May 1877; *Khafi Khan*; *Elphin.* p. 510; *Ward's Hindoos*, iii. p. 107. See Food.

FANAM, a silver coin of the Karnatic, now uncurrent, the falam of the Tamil race. The correct value of one Company's rupee was 12 fanams 68·57 cash. Where much nicety was not required, the usual rate of conversion was 1 fanam = 1 anna 3 pice. It was a small silver coin, the 1-12th of a rupee; no longer coined.

FAN PALMS. The Chamærops humilis, *Linn.*, used for this purpose, grows in considerable abundance on the shores of the Mediterranean. The leaves of many of the palms of Southern Asia—the Corypha, the Livistonia, palmyra, and date palms—are similarly employed. That of Ceylon is the Corypha umbraculifera, *Linn.*

FAQEER, Fakir, Darvesh or Dervis, amongst the Mahomedans, religious orders or communities, of whom there are several sects. In India only ten classes are generally met with. The Kalandar darvesh are rarely seen in India.

Faqir is from Fukr, ARAB. The Persian name Darvesh is from Dar, a door, and Vihtan, to beg. There have been many branches and orders. Jalal-ud-Din founded the Mulavi order. In European Turkey, they have formed somewhat permanent communities, and about sixty different orders, each named after its founder, are supposed to exist there. The Bataahi of Constantinople are said to be quite atheistic, not attached to the principles of the Koran, nor firm believers in Mahomed as a prophet. They are generally of the Shiah sect of Ali, and are Sufi or Mahomedan spiritualists. The Rafai darvesh, in Turkey, inflict on themselves great self-torture. Some of the wandering Indian fakirs wander so far west as Hungary, to visit the shrine of a santon, Gul-baba, and they sail to Tenasserim and Burma. One whom the Editor met near Hingolee, in the Dekhan, was a native of the Panjab, but had been to Ceylon, Mergui, Tavoy, Rangoon, and Moulmein. As a general rule, the fakirs in India are now a low, profligate set of men, held in great disesteem by all classes of the community, and some of them are utterly degraded in habits and mode of life. The bulk of them are Be-Sharra, literally without law, *i.e.* do not act up to the precepts of Mahomed, but are latitudinarians; a few are Ba-Sharra, or with law, following Mahomedanism. The latter are the Salik. The Be-Sharra are styled Majzub, Azad, Ras-us-Shahi, Imam Shahi. The Kalandar are of both sects. Some of the fakir take up their residence in burial-places, which they create, or of which they become the proprietor or makandar; or they reside in an asthan or a takia.

The Kadria or Banawa profess to be the spiritual descendants of Saiad Abdul Kadir Jilani of Baghdad. The Chisti are followers of Bandanawaz, whose shrine is at Kulburga; they are usually of the shiah sect. Shutaria are descendants or followers of Abdul Shutar-i-nak. Tabkatia or Madaria, followers of Shah Madar; many of the Madaria are jugglers, also bear or monkey leaders. Malang are descendants from Jaman Jati, one of Shah Madar's disciples. Rafai or Gurzmar are descended from Saiad Ahmad Kabir Rafai, who seem to beat, cut, and wound themselves without betraying suffering, and who, in the belief of the faithful, can cut off their own heads and put them on again. Jalalia, followers of Saiad Jalalu l-Din Bokhari. Sohagia, from Musa Sohag, dress like women, wear female ornaments, play upon musical instruments, and sing and dance. Naksh-bandia, followers of Baha-ud-Din of Nakshband, distinguished by begging at night, and carrying a lighted lamp. Bawa piari dress in white. There are other distinctions. At the Maharram a number of the lower classes assume the character and garb of fakirs of different ridiculous personations, for the amusement of the populace and the collection of contributions.—*Wils.; Kanoon-i-Islam.* See Darvesh; Sufi; Eesawiah.

FAQIH. ARAB. A doctor of law; in Spanish, the alfaqih.

FARABATUN, a Christian priest, whom Abul Fazl names Padre Farabatun, and describes as learned in science and history. Akbar prevailed on him to come from Goa to undertake the education of a few youths destined to be employed in translating the productions of Greek literature into Persian.—*Elph.* p. 468.

FARAN, the valley from which the Jabl-Musa range rises. That part of the range on which the Convent of St. Catherine is built is called Tur Sina. See Jibbel-Musa; Senai.

FARARI. PERS., HIND. Absconding, disappearance; a person who has disappeared. Fauti-o-farari, casualties by deaths and disappearance.

FARAS. HIND. The tamarisk plants. Tamarix orientalis and T. dioica, in the drier parts of the Doab and in the vicinity of Dehli, are called Asul or Atul; and the galls, or chôti-mai, which are formed on the tree are called Samrat-ul-asul in Arabic.—*Elliot.*

FARASH. PERS. A carpet; hence Farāsh, a carpet-spreader. But in Persia, Afghanistan, and India, applied to under-servants generally. Amongst the Mahomedan armies the Farāsh was a tent-pitcher, which in the British camps is the duty of the lascar or khalassi.

FARAZ. ARAB. In the Mahomedan religion, points ordered by God—God's commandments; Sunnud being the ordinances of their prophet. For instance, the Ramzan or Eed-ul-Fitr feast and the Bakr-eed feast are alike Farz and Sunnud, while the Akhri-char shambah, the Maharram, and the Shab-i-Burat are only Sunnud. Thus, also, Captain Burton says, the afternoon prayers being Farz, or obligatory, were recited, because we feared that evening might come on before the ceremony of Ziyarat (visitation) concluded. Throughout India, the Farz, or commands of God, are almost obscured by the quantity of the Sunnud and the traditions, and there are frequent reformations attempted, but these speedily assume political features. A sect styled Farazi, or Faraizi, was formed at Dacca in 1828. Daulatpur village, in Faridpur district of Bengal, was the birthplace of Haji Sharit-ulla, the founder of that Faraizi sect, which rapidly spread throughout the whole of Eastern Bengal. The Faraizi are a branch of the great Sunni division, and in matters of law and speculative theology they belong to the school of Abu Hanifa, one of the four authoritative commentators on the Koran. They reject traditional customs, declare that the Koran is the complete guide to spiritual life, and they therefore call themselves Faraizi, or followers of the Faraiz (pl. of Arabic Farz), the divine ordinances of God alone. The majority of Musalmans in the delta of the Ganges and Brahmaputra are descendants of the aborigines, who retained many of the superstitious ceremonies of their former life. The reform inaugurated by Haji Sharit-ulla was a protest against such pagan practices, and a return to the simple habits and monotheism of the Koran. He insisted on the duty of the holy war (jihad), the sinfulness of infidelity (kufr), of introducing rites and ceremonies into worship (bida'at), and of giving partners to the one God (shirk). Externally a Faraizi may be known by the fashion of wrapping his dhoti or waist-cloth round his loins without crossing it between his legs, so as to avoid any resemblance to a Christian's trousers, and by his ostentatious mode of offering prayers with peculiar genuflexions in public. The rapid spread of the Faraizi movement in the lifetime of its founder affords sufficient justification for his enthusiasm. The majority of them are cultivators of the soil, but not a few occupy the rank of traders, being especially active in the export of hides. All alike are characterized by strictness of morals, religious fervour, and faithful promotion of the common interests of the sect.—*Elliot; Wilson; Burton's Mecca*, ii. p. 66; *Imp. Gaz.*

FARD. ARAB. Any single thing; in accounting, a slip of paper, a list, a sheet, a slip in an account book, a statement, an account; a single long shawl, as opposed to Do-shala (q.v.).

FARDUSI, a celebrated Persian poet. He wrote the Shah-namah in the 11th century, containing three heroes, Jamshid, Faridun, and Garshasp, as the three earliest representatives of the generations of mankind. See Firdusi.

FARFEYUN. HIND. Gum of Euphorbia Canariensis and other species. Its Persian name is Shir-i-darakht-i-zakum, and Arabic, Akal-naf-sah. The Euphorbium known in Europe is very likely the juice of E. Canariensis, but that of the bazars of India is produced from E. antiquorum and other species. It is used as a remedy for rheumatism.—*Powell.*

FARFUGIUM GRANDE. *Lindley.* A beautiful new herbaceous plant, having rich blotched or variegated leaves.—*Fortune's Res.* p. 420.

FARGARD. PERS. A section of the Vendidad, the sacred book of the ancient Zoroastrians.

FARGHANA, Baber's ancestral dominions were on both sides the Jaxartes, a portion of ancient Sakatai or Sakadwipa (Scythia), where dwelt Tomyris, the Getic queen, immortalized by Herodotus, and where her opponent erected Cyropolis, as did in after times Alexander the Macedonian his most remote Alexandria. From this region the same Gete, Jit, or Yuti, issued to the destruction of Bactria, two centuries before the Christian era,

and again in the 6th century to found a kingdom in N. India. A thousand years later, Baber issued with his bands to the subjugation of India, which his descendants retained up to the end of the 18th century. This portion of Central Asia is the officina gentium whence issued those hordes of Asi, and of the Jit or Yeut (of whom the Angles were a branch), who peopled the shores of the Baltic, and the precursors of those Goths who, under Attila and Alaric, altered the condition of Europe. Baber quitted Samarcand as a fugitive, and with less than 2000 adherents commenced his enterprise, which gave him the throne of the Pandu.—*Malcolm's Persia.*

FARHAD and Shirin, two lovers in a Persian story, fabled to have their tombs near Kumb-i-Shirin, a pool in Las, in the great Lak or pass connecting that province with the western district of Jao.

FARIA, MANUEL DE, author of the History of the Discovery and Conquest of India by the Portuguese, written in Spanish, and translated into English by John Stevens.—*Playfair's Aden.*

FARIDKOT, one of the Sikh states under the political superintendence of the Panjab Government, lying between lat. 30° 13′ 30″ and 30° 50′ N., and between long. 74° 31′ and 75° 5′ E.—*Imp. Gaz.*

FARIDPUR, a revenue district in Bengal, lying between lat. 22° 47′ 53″ and 23° 54′ 55″ N., and between long. 89° 21′ 50″ and 90° 16′ E. Area in 1877, 2365 square miles; pop. in 1879, about 1,502,436. Of its various races the Chandals are numerous. They are capable of great fatigue. They are a despised race, and a Brahman thinks himself defiled by even crossing the shadow cast by a Chandal; but in 1873 they organized a general strike in the district, resolving not to serve the upper classes until their own position was ameliorated. The Bunas, another aboriginal race, number 2412. See Faraz.

FARID-ud-DIN, styled Shakr-Ganj, a Mahomedan saint, whose shrine is at Ajudhan, on the bank of the Sutlej. See Pak Pattan.

FARIGH. ARAB. Release, free. Farigh nama or Farigh khatti, deed of release. From this word also is the word Faraghat, leisure, enjoyment, repose, affluence; also Farigh-khatana, a fee to the writer of a Farigh khatti.—*Elliot.*

FARINA. ENG., LAT., SP. Flour, meal; any flour used as food, either from wheat, rice, janipha, potato, jatropha, maranta, curcuma, canna. Every now and then some one of the farinæ is prominently put before the public as a novelty. Semolina consists of the gluten of wheat, with a proportion of the starch, part of this having been removed. Semolina resembles in appearance sago; but the little granules of which it is composed, in place of being round as in sago, are angular. When moistened, the water is rendered perceptibly opaque and milky by the starch still present, and the fragments swell up and become soft and glutinous. See Ervum.

FARING. HIND., PERS. Europe, from the old term Frank. Hence Faringi, a European, or relating to Europe.

FARMAN. PERS., HIND. A royal mandate; an order from a king or other superior, which the British write Firman.—*Elliot.*

FARMS of an experimental character have been formed by the British Indian Government, since the middle of the 19th century, for the object of improving the agricultural knowledge of the people, at Sydapet near Madras, Nagpur, Kandesh, Sind, Dharwar.

FAROKHSIR, or Mahomed Farokhsir, emperor of Dehli, was the son of Azim-us-Shan. He ascended the throne on the 4th February 1713, after defeating and putting to death his uncle, Jahandar Shah. In Dehli he tortured to death Banda, the Guru of the Sikhs, the successor of their Guru Govind, and beheaded 700 of his followers. When the empire began to totter, he furnished the last instance of a Moghul sovereign marrying a Hindu princess, the daughter of raja Ajit Singh, sovereign of Jodhpur or Marwar. To this very marriage the British owe the origin of their power. When the nuptials were preparing, the emperor fell ill. A mission was at that time at Dehli from Surat (1715), where they traded, of which Mr. Hamilton was the surgeon. He cured the king, and the marriage was completed. In the oriental style, he desired the doctor to name his reward; but instead of asking anything for himself, he merely asked a grant of land for a factory on the Hoogly for his employers. It was accorded; and this was the origin of the greatness of the British empire in the East. Such an act deserved at least a column. Farokhsir was deposed and murdered on the 16th February 1719, by Abdullah Khan and Husain Khan. His feeble, brief reign was disturbed by the intrigues of these Syuds of Barrh, Abdullah Khan and Husain Ali.—*Elph.* pp. 610–612; *Tod's Rajasthan*, i. p. 152.

FARQAH, a tribe, from ARAB. Farq, separation. Hence also Farāqat, separation; Faraqat behtar az mululat, Absence is preferable to quarrelling; also Farq, the part on the crown of the head where the hair parts.

FARRAH-RUD, a river of Afghanistan, which rises in the mountains in the unexplored country of the Taemuni, and, after a course of 200 miles, falls into the lake of Seistan.

FARRAKHABAD, a town in the N.W. Provinces of British India, in lat. 27° 23′ 35″ N., and long. 79° 36′ 50″ E., with a population of 79,204 souls. It gives its name to a revenue district, lying between lat. 26° 46′ 31″ and 27° 42′ 51″ N., and between long. 76° 9′ 59″ and 80° 3′ 59″ E. Area, 1744 square miles, with a population in 1872 of 918,850 persons. It possesses great antiquarian interest, owing to the presence within its boundaries of Kanouj, the capital of a powerful Hindu kingdom in the earliest centuries of the Christian era. Amongst the tribes, the Baniya number 15,717; Ahirs, 36,372; Chamars, 94,274; Kayasths, 15,378; and Kurmi, 30,884. —*Imp. Gaz.*

FARS, Pars or Farsistan, is the province of the kingdom of Persia which gives its name to the country. It lies between lat. 27° 20′ and 31° 42′ N., and long. 49° 20′ and 54° E., being about 220 miles in length and breadth. It has Kirman and Luristan on the east, the Persian Gulf on the south, Khuzistan on the west, and Irak-Ajam on the north, with a superficies of about 44,335 geographical square miles, or nearly one-third of France. It has many rich and picturesque tracts, and is less desert than other parts of Persia. This province of Persia contains the salt lakes of Bakhtegan (also called Niriz) and Dereachte,

which are in the neighbourhood of Shiraz; and there is a fresh-water lake in the plain of Zerdan. The principal streams are the Bendamir or Araxes, which receives the Kur-ab or Cyrus river, as it falls into lake Bakhtegan, and the Nabon, whose course is from Firozabad southward to the Persian Gulf. In this province are also the higher parts of the two branches of the Tab. Towards the north (according to Mr. Morier) Madar-i-Suliman marks the tomb of Cyrus (son of Cambyses); to the west are the ruins of Kizla Safed; and nearly in the centre are those of the ancient capital, Persepolis. This territory represents ancient Persis, which was watered by the Araxes, Gyndes, Oroatis, Arasis, Pelevar, and Bagrad. Its cities were Corna, Axima, Arbrea, and Artacana, besides many others whose sites are unknown. Persepolis was the capital in the time of Alexander; more anciently, the seat of the government was at Pasargada (Strabo, lib. xv. p. 729), the Persagadis of Quintus Curtius (lib. v. cap. vi.); but as this historian speaks of the fortress of Persepolis, and the city of Persagadis (Farsa-Gerd ?), it is possible that the extensive ruins in the plain, near the former, may be the Pasargada of Pliny (lib. vi. cap. xxvi.). The tribes now inhabiting it are,—

Feili, 100 houses, Lek, Persians and Lek.
Byat, 120 houses, Turk.
Bergushadi, 50 houses, Turk.
Gurani, 400 houses and tents, Lek.
Kajar Afshar, a mixed tribe of Turk, 250 houses, and Lek 100 houses.
Abulvardi, 300 tents, smugglers, engaged in trade.
Tewellellee, 40 houses, Turk cultivators.
Amelsh, 40 houses, Turk cultivators.
Zargar Lek and Kara Guzlu Turk, 100 houses.
Basile, 3300 tents, of Arab descent.
Arab, 7300 tents.
Kashki, 30,000 to 40,000 tents of Turks.
Mamasenni, 8000 tents and houses of Lek.

The entire southern region of Fars, bordering on the Persian Gulf, is called the Garmsair. It extends from the sea to the latitude of Kazerun, and runs parallel with the Persian Gulf. From the banks of the Tab to the confines of Luristan, from Bushir eastward as far as Cangoon, the tract is named the Dushtistan, or land of plains. The Tungistan is a small tract of land east of Bushir. The greater portion of the people of the whole Garmsair consists of an independent lawless set, many of the tribes being robbers by profession. A huge wall of mountains separates the Garmsair or low region, from the Sardsair or high table-land of Persia. One of the most conspicuous of these is an abrupt lofty hill named Hormooj, where specimens of coal were found. Sardsair is also termed the Sarhada, a word literally signifying boundary or frontier, but, there, is generally applied to any high land where the climate is cold. The Sea of Oman, or Persian Gulf, called also Persian Sea, Erythrean Sea, also Sea of Fars, has several islands, the Jazirah-i-Lafet; called also Jazirah-i-Daraz, or Long Island, known on maps as Kishm; also Khareg Island, on maps Karrack, a small island, but well watered, not very far from Bushir, which once belonged to the Dutch, and was held from 1838 to 1846 by the British.—*Ouseley's Tr.* i. p. 304; *Kinneir's Per. Empire*, p. 54; *Chesney's Euphrates*, p. 210; *Porter's Tr.* i. p. 548; *MacGregor's Persia.*

FARSAKH. PERS. By the old Greek historians παρασάγγης. It is the Persian league, about 18,000 feet in length, and is known to Europe as the Farsang or Parasang. It is usually reckoned at $3\frac{3}{4}$ British miles, but, like the cos of India, it varies greatly. According to Major Rennell, the farsakh is little short of $3\frac{1}{2}$ British miles (Illustrations of the Retreat of the Ten Thousand, p. 4). Mr. Fraser (Journey into Khorasan, p. 367) says, The Khorasani farsakh is rather more than that of Irak; rather less than 4 British miles. A farsang is also said to be distance within which a long-sighted man can see a camel, and distinguish whether it be white or black (Bundehesch, cap. xxvi.). It is also described as one hour's travel or journey, or three miles.—*De Bode's Tr.* p. 57; *Rich's Kurdistan*, i. p. 197; *Porter's Tr.* i. p. 255.

FARSAN, an island off the coast of Yemen, about three miles from the seaport of Jezan. The population are largely occupied in the pearl fishery.

FARSETIA HAMILTONII is the Farid buti, HIND., a Panjab plant, rarely used in medicine. Leaves and stem glaucous, pilose, with pink cruciferous flowers, and broad flattened siliquæ, one of the Brassicaceæ.—*Powell*, i. p. 328.

FARUD. ARAB., HIND., PERS. Literally descent or alighting; in the customs department, delivery in of goods.—*Ell.*

FAPUKHI, a dynasty of kings of Kandesh, founded by Malik Raja, a person of Arab descent.

	A.H.	A.D.
Malik Raja,	?	?
Nasar Khan, first king,	1399	801
Miran Adal Khan,	1437	841
Miran Mubarak I.,	1441	844
Adal Khan I.,	1457	861
Daoud Khan,	1503	909
Miran Muhammad Shah,	1520	926
Miran Mubarak II.,	1535	942
Miran Muhammad Khan,	1566	974
Raja Ali Khan,	1576	984
Bahadur Shah,	1596	1005

FASL. ARAB., HIND., PERS. A season, a crop, a harvest; a space of time, hence 'fasli,' applied to the era established with reference to harvests in India. There are two chief crops, viz. Fasl-i-Rabi or Rabbi, the spring harvest, from seeds sown in September and October, which yield, when reaped in February and March, the dry or cold-weather crops of India, as wheat, barley, and different pulses not requiring irrigation. The other is the Fasl-i-Kharif or simply Kharif, the autumnal harvest, consisting chiefly of rice, or grains requiring irrigation, sown at the commencement of the rainy season, and usually reaped at its close, about October or November. Fasl-Bhadonwi is the harvest of millets, pulses, and other plants of quick growth, sown at the commencement of the rainy season, and gathered about September.—*W.*

FASLI, or harvest era of Northern India, has been traced to the year of Akbar's accession to the throne, or the 2d Rabi-us-Sani, A.H. 963 (14th February 1556), when a solar year for financial and other civil transactions was engrafted on the current lunar year of the Hijra, or subsequently adjusted to the first year of Akbar's reign, the object of that sovereign being merely to equalize the name or number of the year all over his vast empire, without interfering with the modes of subdivision practised in different localities, and from this spring the four existing harvest years. The Fasli year of the Dekhan owes its origin to the emperor Shah Jahan, who, after

bringing his wars in Maharashtra to a close in 1686, endeavoured to settle the country, and introduce the revenue system of Todar Mull, the celebrated minister of Akbar, and thus naturally came the revenue or harvest year. It differs from the Fasli of Bengal by seven years, from the acceleration of the lunar year. The year is or ought to be sidereal, but the Madras Government have now fixed its commencement to the 12th July, and applied it solely to revenue matters. The Bengali san, the Vilayati san, and the Tamil Fasli year, may be always considered identical with the Saka solar year, while the Fasli of the Western Provinces may in like manner be classed with the luni-solar samvat there current. The Hijra year began on the 26th November 1555 N.S. The concurrent Fasli year, A.H. 963, began on the 1st of the lunar month Asan (Aswina), which fell on the 10th September 1555; the Valayati year 963 on the 1st of the solar month Asan, which occurred on the 8th September 1555. But the Bengali san 963 began on the 1st Baisakh, falling within the same Hijra year, which was necessarily that of the 11th April 1556. The number 592 must be added to convert the two first eras into Christian era account, if less than four of these months have transpired, and 593 years if more; also 593 years for the first nine months of the Bengali san, and 594 for the rest. —*Prinsep's Antiquities by Thomas*, p. 170; *Elliot*.

FASTIKI. HIND. A kind of emerald.

FASTS form part of the religious practices of Hindus, Christians, and Mahomedans. The Hindu fasts called Barth are observed in sorrow for the dead, in honour of Vishnu, Lakshmi, Eswara or Siva, Vigneswara, and Subramanya, son of Siva; and the use of phulaha, certain grains, as buckwheat, etc., is admissible on other fast days, some of which seem to have an astronomical or sidereal bearing. The fasting of Christians consists of abstinence on certain days seemingly from one kind of animal food; but the Mahomedan fast in India (roza rakhna) during the month of Ramzan is from before sunrise till after sunset, during which they do not even swallow the moisture of the mouth, and abstain from all enjoyment.

FATAH ALI SHAH was king of Persia up to the year 1828. His life illustrates one phase of Persian customs. He was an eminently handsome man. He possessed one of the largest families on record, in ancient or modern times. Besides the four akad or lawful wives permitted to every Mahomedan, he had more than 800 mutea or inferior spouses. He continually changed his wives, as he was tired of them and lacked novelty; but he never parted with any who had borne him male children. He had upwards of 130 sons, and 160 or 170 daughters. At the time of his demise, his children, grandchildren, and great-grandchildren amounted to about 5000 souls. The descendants of these princes (Shahzade) were long a heavy burden to the country. Scarcely a village of any size in some parts of Persia but had some resident at it. Some have become comparatively well off, but many fell into great poverty; and some of his descendants have had to earn their living as mechanics and tradesmen in the different cities. Augustus XI. of Poland is said to have had 354 children by his numerous concubines. He also had one of his own daughters for his mistress, a piece of depravity of which Fatah Ali Shah was never accused.

FATAH-ul-BALDAN, a historical work on Mahomedan countries from Spain to Sind, by Ahmad, son of Yahya, son of Jabir, styled Al-Biladuri. He was tutor to one of the princes of the family of the khalif Al Mutawakkal, and died A.D. 892-3 (A.H. 279).—*Elliot, Hist. of India.*

FATE, the Taqdir, Nasib, Kaza, Kismat, Honhar, and Tali of Mahomedans.

FATEHPUR, a revenue district in the N.W. Provinces of India, lying between lat. 25° 26′ 17″ and 26° 12′ 50″ N., and between long. 80° 16′ 39″ and 81° 23′ E. In 1872 there were 593,256 Hindus, 70,554 Musalmans. The Kurmi and Kachhi together amounted to 89,044. They are industrious and diligent agriculturists. They pay higher rents than any other tribes, and pay them easily. The Ahirs, Lodhs, Arakhs, and Pasi numbered in all 162,907 persons.—*Imp. Gaz.*

FATEHPUR SIKRI, a municipal town in the Agra district of the N.W. Provinces, and formerly capital of the Mughul empire; population (1872), 6878; lat. 27° 5′ 35″ N., long. 77° 42′ 18″ E. It chiefly consists of a vast expanse of ruins, enclosed by a high stone wall some five miles in circuit; amongst them the tomb of Shaikh Salim, Chishti, a Musalman ascetic, through whose intercession Akbar obtained an heir, in the person of Prince Salim, afterwards known as the Emperor Jahangir. The tomb consists of an elaborately carved shrine in white marble, enclosing a sarcophagus within a screen of lattice-work, inlaid with mother-of-pearl. On this terrace stand, among other noble buildings, the houses of Birbal and of the 'Christian lady;' the Diwan-i-Khas and the Diwan-i-am, or Council Chamber and Hall of Judgment. The Elephant Gate contains two massive figures of the animals from which it derives its name. Close by towers the Hiran minār, a pile some 70 feet in height, covered with enamelled imitations of elephants' tusks.—*Imp. Gaz.*

FATHER and Mother.

Walidin, ... ARAB.	Baba, Peder (father), TURK.
Père, Mère, . . . FR.	Ana, Nine (mother), ,,
Vater, Mutter, . . GER.	Taya, Tya pan, . . TAM.
Ma-Bap, ... HIND.	Tilli, Tandri, . . TEL.
Padre, Madre, . IT., SP.	

Among the people of India, and amongst the Chinese, an honorific style of address to people of rank, or to a person from whom a kindness is received or expected. In China it is a title by which the representatives of authority are designated.—*Huc, Chinese Empire*, i. p. 22.

FATHOM.

Bu, ... ARAB.	Braccio, ... IT.
Lan, ... BURM.	Tesa, ... LAT.
Toise, ... FR.	Braza, ... SP.
Klafter, Tiefe, . . GER.	Kulaj, ... TURK.
Bam, ... HIND.	

This is a natural measure, from point to point of the outstretched hands. It was common to Greek, Roman, and Indian, and is four cubits in length. The Greeks and Romans had also the foot (pes), the hand (palm), the palm (παλαιστή), and the finger (digitus). The Romans also had the military pace; the Greeks and Romans also had the cubit (cubitus.) The ancient inhabitants of Asia had, as a unit measure, the cubit or ell, from the elbow to the point of the little finger.

All of these—digit (angul), palm, ell (hath), and span (bilish)—are in use in India.

FATIHAH, Arab., also Al-fatihat, Fatihat, and Fatiha. The name of the opening chapter of the Koran. It is a prayer, and is held in great veneration by Mahomedans, who give it several honourable titles, such as the Chapter of Praise, of Prayer, of Thanksgiving, or Treasure. They esteem it the quintessence of the whole Koran, and often repeat it in their devotions both public and private, as Christians repeat the Lord's prayer. Most Turkish epitaphs end by the words, 'Fatihah ruhun ichun,' say a fatihah for his soul. The fatihah is also entitled the preface of the Koran, or introduction. It was revealed at Mecca, and is as follows, commencing with the words Bismillah-ir-Rahman-ur-Rahim:—'In the name of the most merciful God, praise be to God, the Lord of all creatures, the most merciful, the king of the day of judgment, thee do we worship, and of thee do we beg assistance. Direct us in the right way, in the way of those to whom thou hast been gracious; not of those against whom thou art incensed, nor of those who go astray.' This prayer is offered with upraised hands, which are afterwards drawn down over the face. The hands are raised in order to catch the blessing that is supposed to descend from heaven upon the devotee, and the meaning of drawing the palms down the face is symbolically to transfer the benediction to every part of the body. The Dairah ki fatahah is the cemetery oblation; the Hazrat shah ki fatahah is on Maula Ali; the Niat khair ki fatahah is the prayer offered for the welfare of any one.—*Sale's Koran; Burton's Mecca*, i. p. 286; *Ferrier's Journey*, p. 502.

FATIMAH, daughter of Mahomed, and wife of her cousin Ali. Her tomb at Loms, Armenia, is held by Shiah Mahomedans in the highest reverence. The Koran is read there night and day; and nearly the same privileges are offered to the pilgrims as at Mecca. It is a place of pilgrimage.—*Chatfield's Hindustan*, p. 209; *Tavernier*, ch. iii. and vi.

FATSIA PAPYRIFERA. *Bentham.*

Aralia papyrifera, *Hooker.* | Panax pap., *F. v. Mueller.*

The rice-paper plant of Formosa, used to make into the commercial rice-paper, also for sola hats.

FATSIZO, or Inaccessible Island, in lat. 33° 6′ N., and long. 140° E., a penal settlement of Japan.

FATTEH MAHOMED, a Mahomedan of Sind, who in 1788 dethroned Rahiden, Rao of Cutch, who had embraced Mahomedanism; ob. 1813.—*Burnes' Sind.*

FATWA. Arab. A judicial sentence.—*W.*

FAUCHE, HIPPOLYTE, translator of the Mahabharata, in 7 vols., Paris 1863–67.

FAULKNER, ALEXANDER, an officer in the civil service of H. M. Government at Bombay in the middle of the 19th century, author of Commercial Dictionary, a work containing in a small bulk a vast amount of useful information relating to the commercial and economic products of India.

FAYRER, Sir JOSEPH, M.D., LL.D. and F.R.S. London and Edinburgh, F.R.C.P. London, and F.R.C.S. of England and Edinburgh, Fellow of the University of Calcutta, Fellow of the Botanical Society of Edinburgh, Vice-President of the Zoological Society of London, Knight Commander of the Star of India. He entered the British navy on the 12th August 1847, from which he retired; and during the siege of Palermo, from December 1847 to March 1848, he served in its military hospitals. In 1848 he was present in Rome during its siege by the French. From December 1849 till April 1850 he was in the Royal Artillery branch of the British medical service, but resigned and entered the East India Company's service, arriving in Calcutta on 9th October 1850. During the second Burmese war he was present at the taking of the stockades and the capture of Rangoon, in charge of the field hospital, where he remained for a year as medical storekeeper and civil surgeon. In 1853 he was appointed Residency Surgeon of Lucknow, in which he served in 1857 during its siege by the mutineers. His house was one of the chief garrisons, and 14 were killed and 40 were wounded in it. He was with Lord Clyde at the relief of Cawnpur. He was appointed in 1859 Professor of Surgery and First Surgeon to the Medical College Hospital, Calcutta. In 1858 he was created a Companion of the Star of India, accompanied the Duke of Edinburgh and the Prince of Wales during their travels in India, and in 1876 was created a Knight Commander of the Star of India. He was author of a book on the Indian Tiger; of one on the Thanatophidia of India; of a work on Clinical and Pathological Observations in India; of another on Tropical Diseases; of one on Indian Fevers; and of many papers and monographs in the journals of Europe and India. The Royal Family of Great Britain and his contemporaries bestowed on him many professional honours. He was Honorary Physician to the Queen, and to H.R.H. the Prince of Wales, and to H.R.H. the Duke of Edinburgh. He was President of the Asiatic Society of Bengal; Member of the Senate of the Army Medical Schools, Netley; President of the Medical Board at the India Office; President of the Medical Society of London; President of the Epidemiological Society, London; a Governor of Guy's Hospital; Consulting Physician of Charing Cross Hospital; Fellow of the Royal Geographical Society of London.

FAZL ULLAH RASHID, styled Rashid-ud-Din, author of Jami ut Tuarikh. See Rashid-ud-Din.

FEASTS.

Ziafat,	Arab., Pers.	Banchetto,	It.
Festin,	Fr.	Banquete,	Sp.
Fest,	Ger.		

Feasts are often mentioned in the Old and New Testamemts, and the texts find many illustrations in India. Genesis xlv. 22 says, 'To all of them he gave changes of raiment;' and at the close of a feast, Hindus, among other presents to the guests, commonly give new garments. A Hindu garment is merely a piece of cloth, requiring no work of the tailor. Deuteronomy xxiii. 10 says, 'He shall not come within the camp;' and Hindus in a state of uncleanness are interdicted from feasts, etc. Mark xiv. 20 says, 'It is one of the twelve that dippeth with me in the dish.' In the East, Hindus never eat together from one dish, except where a strong attachment subsists between two or more persons of the same caste. In such a case, one person sometimes invites another to come and sit by him, and eat

from the same dish. It is highly probable that the same custom existed among the Jews, and that the sacred historian mentions this notice of our Lord's, 'It is one of the twelve that dippeth with me in the dish,' to mark more strongly the perfidy of the character of Judas. John ii. 8 says, 'Bear unto the governor of the feast.' It is customary, both with the Hindus and the Mahomedans, to appoint a person who is expert in conducting the ceremonies of a feast, to manage as governor of the feast. This person is rarely the master of the house. The numbers invited amount occasionally to hundreds, sometimes thousands, and a person to secure regularity is indispensable. In Asia the term is applied by Europeans to all the religious festival rites of the natives, as to the Ramzan and Maharram, etc., of the Mahomedans, to the Diwali and Dassarah, etc., of the Hindus, to the festivals of the Chinese, Burmese, Japanese, etc.—*Ward's Hindoos.*

FEATHERS.

Rishat, ...	ARAB.	Plume, ...	IT.
Pluimen, ...	DUT.	Bulu, ...	MALAY.
Plumes, ...	FR.	Plumas, ...	SP.
Federn, ...	GER.	Rakaigal, ...	TAM.
Par, ...	HIND.	Rekkalu, ...	TEL.

In Asia, feathers are never used for stuffing beds or pillows, but, as in Europe, they are largely used for personal ornament, those of the ostrich, the Indian roller, the green kingfisher, and the egret being most frequently employed. Those of the ostrich are imported from Africa, and the west of Europe is chiefly supplied from the northern margin of the Great Desert of Arabia. Those plucked from the living animal, or recently killed birds, are more beautiful and more durable than if taken from the animal some time after death, or than cast or dropped feathers. The plumage of the male bird is very superior to that of the female, the fine drooping plumes on the back and near the tail being of the purest white, while those of the female are never free from a tinge of grey near the tip. Commercolly, in Bengal, is celebrated for its egrets' feathers for head-dresses, tippets, boas, and muffs, and some of them are exceedingly beautiful, and not inferior in quality to those imported into Great Britain from Africa. The down of the young adjutant bird also is made into ladies' boas and victorines. The under tail coverts are collected and sold in considerable quantity. Many are procured at Trichoor in Malabar. In the Panjab the narrow black wing feathers of the onkar are used to make the kalgi, or plumes for the khod or helmet. These plumes have a very elegant appearance; they stand about 6 or 8 inches above the helmet. The feathers of the bustard are similarly used. In Madras, dealers in birds' feathers carry on their trade on an extensive scale. One dealer had nearly 100 sets of hunters, each composed of 4 or 5 shikaris and 1 cook; most of these people are Korawa (basket-makers) who live in and about Madras. Each set has its headman, who is responsible for the others. These sets are sent out once a year, each receiving from 20 to 100 rupees, together with a certain number of nets, a knife, etc. They traverse all India, collecting the feathers of kingfishers, and return after six or eight months to Madras, each set bringing from 1000 to 6000 feathers, which are taken by the dealer at Rs. 14 per 100, and shipped to Burma, Penang, Singapore, and Malacca, bringing 10 to 13 dollars the 100.* Feathers form a considerable export from India. In the four years 1857-8 to 1860-1, to the value of £27,570 were exported, about one-third of which went to Britain, France, and China. Wings of a kingfisher are imported into Burma from India through Arakan. In 1875–1880 the feathers exported from India were:—

Year.	Lbs.	Value, Rs.	Year.	Lbs	Value, Rs.
1875-76,	119,793	3,51,177	1878-79,	55,000	2,19,330
1876-77,	67,466	2,55,466	1879-80,	41,279	1,86,187
1877-78,	67,223	2,69,359			

The blue feathers of the jay, the kingfisher, and other blue-feathered birds, are largely used in China for ornamentation, pasted on silver gilt. The long scapular feathers of the Indian snake-bird, Plotus melanogaster, *Gmelin*, is looked on by the Khassya race as a badge of royalty.—*M. E. J. R.; Dr. Taylor in Ex.*, 1851.

FEE-SHOO. CHIN. A yew tree of the genus Cephalotaxus. Its seeds are to be found in a dry state in all the doctors' shops in Chinese towns. They are considered valuable in cases of cough, asthma, and diseases of the lungs or chest.

FEET-WASHING, alike amongst Hindus and Mahomedans, is a purification strictly attended to before meals. It has always been an oriental custom. With Hindus, so soon as a guest enters, to present him with water to wash his feet is one of the first civilities.

FEL. PERS. Elephant. Hence Fel-khana, elephant shed; Fel-pai, elephantiasis. It is from this word 'Fel,' with the Arabic 'al,' that the words Elephas and Elephant seem to come.

FELAMORZ, the son of Rustum, the hero of Persian romance, was defeated by Behram near the fort of Fessa, between Shiraz and Darab. Behram caused Felamorz to be hanged, and his tomb existed in the village, until, it is said, a European traveller took it away as a relic.

FELIS, a genus of the mammalia, of the cat kind, of the natural order Carnivora, the family Felidæ, and tribe Felinæ. Amongst naturalists, the notices of them are usually limited to the larger wild animals of this genus. The lion, the pard, the cheeta, the chaus, the wild cat, and the caracal or lynx, are common to India and Africa. The tiger, the pard, the clouded leopard, the marbled tiger cat, the large tiger cat, the leopard cat, and the bay cat are common to India, Assam, Burma, and Malayana. The ounce is of Central Asia; and the small tiger cat (F. Jerdoni), the rusty spotted cat, and the spotted wild cat, are confined to the Peninsula of India.

Several of the smaller species of Felis have a very close family resemblance, and zoological writers have not agreed as to their specific distinctions. Similarly, amongst sportsmen in India, there is a continuous attempt to distinguish the various kinds of the cheeta. This word is of Hindi or Mahrati origin, and means spotted; and amongst the spotted feline animals, sportsmen speak of the leopard, the panther, the black leopard, the cheeta, the hunting or maned cheeta; and cheeta is generally applied as a suffix to all of these. There would seem to be at least four varieties of spotted cats, besides such rare animals as the snow leopard of the Himalaya, and the black panther.

The two larger animals, which are confusingly called cheeta, panther, leopard, differ so much in marking and appearance, as to make them,

alike to the scientific and to the unscientific eye, appear distinct species. The lighter coloured of the two has the ground of a light tawny yellow, shaded into white at the belly, and inside of the legs, neck, and chest.

Besides these, there is a small spotted cat also called cheeta, which preys on dogs and small animals, but is quite unequal to cope with a bullock. The rings are closer and smaller than those on the larger panther.

The hunting or maned leopard (Felis jubata, Leoparda jubata), the fourth on the list, is quite distinct, and it has a mane. Its claws are only partially retractile. Many of the native princes train them to hunt antelopes.

Felis leo, the Lion.

Shingal, ... BENG.	Sher; Babbar Sher, HIND.
Untia-bag'h of . . GUJ.	Singha, ... ,,

Naturalists are now of opinion that the lion of Africa and Asia are identical, pale-coloured varieties being common in Africa; but the African lion has a somewhat different physiognomy, and generally a finer mane, as well as a median line of lengthened hairs along the abdomen, which is seldom present in the Asiatic lion. It is found chiefly in the north-west, from Cutch to Hurriana, Gwalior, and Saugor.

Felis tigris, *Linn.*, the Royal Tiger.

Striped tiger, . . ENG.	Putte wagh, . . MAHR.
Bagh, ... HIND.	Rimass, Ha-riman, SUMAT.
Machan, . . . JAVAN.	Pilli, . . . TAM., TEL.

The royal tiger is found throughout India to the S.E. boundary of China, through the Malay Peninsula, in Java and Sumatra. They are numerous in the centre of the Peninsula of India, and very numerous in Singapore. Full-grown specimens vary considerably in size, colour, and markings, but are considered to be of one species. They feed on cattle, on the sambur or Rusa hippelaphus, and more rarely on the Axis maculata or spotted deer, but only when suffering from extreme hunger. Frogs, hog, porcupine, and other creatures are eaten by them. The tiger is not brave, retires before opposition, unless wounded. The buffaloes in herds charge at a tiger and beat it off. The wild dogs hunt down and will drive a tiger away, but have not the power to destroy one; and one was found evidently killed by a boar's tusk. On one occasion, a herd boy being carried off, the buffaloes charged the tiger, and made it drop the lad.

Felis pardus, *Linn.*, the Pard.

F. leopardus, *Schreb.* | Leopardus varius, *Gray.*

Var. *a.* the Panther.

F. leopardus, *Temm.*	F. pardus, *Hodgs.*
Honiga, ... CAN.	Tahir-hay, Bay-heera, HIM.
Adnara, . . CENT. IND.	Asnea, ... MAHR.
Burkal, ... GOND.	Chinna puli, . . TEL.
Tendwa, Chita, . HIND.	Sik, ... TIBET.
Chita bag, . . . ,,	Leopard of Sykes.

This variety of the larger cheeta is generally found in Western Asia, Bengal, Africa, and Afghanistan. It is of a pale fulvous yellow, with white belly, and a shorter and closer fur than the smaller variety; dwells in more open country than the smaller variety, and is a slighter and more active animal, extremely strong and fierce, and instances occur of several men being killed before this cheeta can be destroyed. They destroy wild pigs, monkeys, occasionally domestic cattle, ponies, children, old women.

Var. *b.* the Leopard.

F. leopardus, *Hodgs.* F. pardus, *Temm.*	F. longicaudata, *Val.*
Bibla of the . . . BAURI.	Beebeea bagh, . . MAHR.
Kerkal, ... CAN.	Ghur-hay, . . . SIMLA.
Ger-bacha, . . . DEKH.	Dheer-hay, ... ,,
Bor-bacha, . . . ,,	Lakkar bagha, . . ,,

This is smaller and stouter, fur longer and looser, and spots more crowded. It varies much in size, some not bigger than a large tiger cat. It is very fearless, taking sheep, goats, monkeys, peafowl, etc., prowling around villages, and seizing dogs even in tents and houses. It is more abundant in the forest tracts of Malabar, the Wynad, Gumsur, and the Himalaya.

Var. *c.* Felis melas, *Perron*, F. perniger, *Hodgs.*

This is a well-marked race of a uniform dull black colour, the spots showing in particular lights, always found in forests or forest country, sparingly throughout all India, Assam, Malay Peninsula. This is supposed by some to be a black variety of the Felis pardus, and both varieties are said to have been found in the same den.

Felis jubata, the hunting cheeta or hunting leopard, is common, though not plentiful, throughout Southern India. They can be quite tamed, and handled with freedom. It is the pard of the ancients.

Felis cristata, a fossil tiger thus named was discovered by Sir P. T. Cautley in the Siwalik Hills.

Felis catus, the Cat, Domestic Cat.

Si mi, . . BHOT., SOKPA.	Maida, ... PERS.
Billi, ... HIND.	Poni, ... TAM.
Min-khyeng, . . KAMI.	Pilli, ... TEL.

The general term cat is applied by naturalists to all the feline tribe, but a considerable variety of animals are called cats in all countries, Civet cats, Genet cats, Marten cats, Pole cats, etc.; the Lemur also is the Madagascar cat. The marsupial animals of Australia are known as wild cats. The Shirmindi billi of the people of India means the bashful cat; and the wild cats of India are a small but savage kind of lynx (Felis rufa). Domesticated cats are not alluded to in Scripture, but they are mentioned in a Sanskrit writing 2000 years old, and there are figures of them on the monuments of Egypt of a much prior age. Mummy cats have been identified with Felis chaus or marsh cats, and with F. caligulata and F. bubastes, both still found in Egypt wild and domesticated. Pallas, Temminck, and Blyth believe that the domestic cats are descendants of several wild species, which readily intermingle. F. sylvestris is wild in Scotland. F. lybica is the wild cat of Algiers; and in S. Africa F. Caffra is wild. In India are four wild species, of which F. chaus has a lynx-like tail; F. ornata or torquata occurs at Hansi, and F. manal occurs in Central Asia.

In the Isle of Man cats are tailless, and have long hind legs. The domestic creole cat of Antigua is small, with an elongated head; and that of Paraguay, also small, has a lanky body. In the Malay Archipelago, Siam, Pegu, Burma, all the domesticated cats have truncated tails, with a joint at the end. In China a breed has drooping ears. The large Angora or Persian cat is supposed to be the descendant of the Felis manal of Middle Asia; it breeds freely with Indian cats.

Whittington's nursery tale of England is

rivalled by the story of the Florentine Messer Ansaldo degli Ormanni, in a letter of 'Conte Lorenzo Magalotti' in the 'Scelta di Lettere Familiari,' published by Nardini, Lond. 1802, p. 139; his two cats, due bellissimi gatti, un maschio una feminina, soon relieved the king of an island (Canaria) on which he had been cast by a violent tempest, from the plague of mice, and he was recompensed 'con richissimi doni.'—*Earl*, p. 333; *Darwin's Animals and Plants; Ouseley's Travels*, i. p. 171; *Jour. As. Soc. of Beng.* 1856, p. 441.

Felis uncia, *Schr.*, the Ounce.

F. uncioides, *Hodgs.*	F. irbis, *Ehrenb.*
F. pardus, *Pallas.*	

Sah, ... BHOT.	Pah-le, ... LEPCH.
Snow leopard, . . ENG.	Burrel hay, . . . SIMLA.
Thur-wag, . KANAWAR.	Ikor, ... TIBET.

The snow leopard is found in the higher parts of the Himalaya, from 9000 to 18,000 feet, according to the season. Its ground colour is of a pale yellowish grey; head, cheeks, and back of neck with small irregular black spots. It kills the wild and domestic sheep. Length, head and body 4½ feet, tail 3 feet.

Felis diardi, *Desm.*, Clouded Leopard.

F. macrocelos, *Temm.*	F. macrocelioides, *Hodgs.*
F. nebulosa, *Griff.*	

Zik, ... BHOT.	Tung-mar, . . . LEP.
Lam-chittia of the KHAS.	

A handsome, powerful leopard of the S.E. Himalaya, from 5000 to 10,000 feet elevation; also in Nepal, Sikkim, Burma, Malay Peninsula, Sumatra, Java, Borneo. Very destructive to sheep, goats, pigs, and dogs. Usual ground colour, pale greenish brown.

Felis viverrina, *Bennett*, Large Tiger Cat.

F. viverriceps, *Hodgs.*	F. Himalayana, *Jardine.*
F. ocellidogaster, *Temm.*	F. Bengalensis, *Buch Ham.*
Bagh-dasha, . . BENG.	Madh baghrul, . BENG.

Travancore, Malabar, Ceylon, throughout Bengal up to the S.E. Himalaya Terai, Burma, Nepal, China, and Malayana. It is remarkably beautiful.

Leopardus Japonensis, *Gray*, of Japan, and L. brachyurus, *Swinhoe*, of Formosa.

Felis marmorata, *Martin*, Marbled Tiger Cat.

F. Charltoni, *Gray.*	F. Ogilbii, *Hodgs.*
F. Duvaucelli, *Hodgs.*	F. leopardus dosul, *Hodgs.*
F. diardi, *Jerdon.*	

This prettily-marked wild cat has been found in the Sikkim Himalaya.

Felis Bengalensis, *Desm.*, the Leopard Cat.

F. Sumatrana, *Horsf.*	F. undulata, *Schinz.*
F. Javanensis, ,,	Chaus servalinus, *Gray.*
F. Nipalensis, *Hodgs.*	Leopardus Chinensis, *Ell.*
F. pardichrous, ,,	L. Reevesii, *Ell.*
F. minuta, *Temm.*	

A very variable species, found throughout Ceylon, all India south-eastwards to Java. It is untameable. It is the Wagati of the Mahratta; lives in hollow trees, and destroys hares, mouse deer, etc.

Felis Jerdoni, *Blyth*, the Lesser Leopard Cat of the Peninsula of India, very similar to F. Bengalensis.

Felis aurata, *Temm.*, the Bay Cat.

F. Moormensis, *Hodgs.*	F. Temminckii, *Vigors.*
F. nigrescens, ,,	Moormi cat, *Hodgs.*

Inhabits the central region of Nepal and Sikkim.

Felis rubiginosa, *Is. Geoff.*, Rusty Spotted Cat. Namali pilli, TAM. Of the Karnatic, near Madras and Nellore. Colour greenish grey, with a faint rufous tinge; breeds with domestic cat.

Felis planiceps, *Vigors*, of the Malay Peninsula.

2d. *The Lynxine Group.*

Felis torquata, *F. Cuv.*, Spotted Wild Cat.

F. ornata, *Gray.*	Leopardus inconspicuus, *Gray.*
F. servalina, *Jardine.*	
F. Huttoni, *Blyth.*	

The ground colour is cat-grey, with numerous small black roundish spots. Length 2 feet, tail 1 foot. Central India, common at Hissar; feeds on the jerboa rat.

Felis chaus, *Gulden*, Common Jungle Cat.

F. affinis, *Gray.*	F. Jacquemonti, *Is. G.*
F. kutas, *Pearson.*	Chaus lybicus, *Gray.*
F. erythrotes, *Hodgs.*	

Ban-beral, . . . BENG.	Mota lahn manjur, MAHR.
Mant bek, . . . CAN.	Bhaoga, ... ,,
Katas, Jangli billi, HIND.	Jinka pilli, . . . TEL.
Cherra puli, . MALEAL.	Kada bek, Billa bek, WAD.

Common all over India, and up to 8000 feet, and throughout Africa; breeds with domestic cat.

Felis caracal, *Schr.*, the Red Lynx. Caracal melanotis, *Gray*, is found throughout Africa, in Arabia, Persia, Tibet, in many parts of Central and Western India, not in the Himalaya or Bengal. Feeds on peafowl, hares, etc., and is trained to kill hares, peafowl, kites, crows, cranes.

Felis Isabellina, *Blyth*, is the Lynx of Tibet, and F. manul, *Pallas* (F. nigripectus, *Hodgs.*), is also of Tibet. F. megalotis, *Temm.*, is of Timor.

Felis jubata, *Schreb.*, the Hunting Leopard.

F. guttata, *Hermann.*	F. venatica, *F. Smith.*

Kendua bagh, . . BENG.	Chita, Yuz, Laggar, HIND.
Chircha, Sivungi, . CAN.	Chita pull, . . . TEL.

This was the pard, panther, and leopardus of the ancients. Length, head and body about 4½ feet, tail 2½ feet, height 2½ to 2¾ feet. It is found throughout Africa, in S.W. Asia, Syria, Mesopotamia, in Sind, Rajputana, Kandesh, Central and Southern India. It attacks antelope, gazelle, and nilgai. It is trained to hunt deer, and is carried hooded on a cart till near the herd, where it is unhooded and slipped. It then slips down, and, if near the antelope, springs forward with a velocity perhaps exceeding that any other quadruped possesses. It singles out the biggest buck of the herd, holds it by the throat till disabled. If it fail, it walks about angrily.—*Jardine, Mammals; Elliot; Blyth.*

FELL, CAPTAIN, I.N., surveyed the Coromandel coast and the northern parts of the coast of the Tenasserim Provinces.

FELLAH, Fallāh, in Egypt, a cultivator, a farmer; but applied to an Egyptian is deemed derogative.

FELLEK. PERS. A stout pole 6 or 8 feet long, with two rope nooses in the centre, used for the bastinado (zarab). The sufferer is laid on the back, his feet are inserted in the nooses, and retained immoveable in the air by a man at each end of the pole; and two men, armed with pliable sticks, called chob, beat the soles of the culprit's feet. The Persians call it Chob khurdan, to eat stick.

FELSPAR, a mineral entering largely into the composition of hypogene rocks; granite is composed of felspar, quartz, and mica. It forms nearly two-thirds of granite rocks; it contains potass, an alkaline substance with a strong attraction for moisture or water. After a shower or a heavy night's dew, the moisture is taken up by the felspar, and conveyed into the substance of the rock, a portion of the potass being dissolved

out. After a time the remaining constituents of the felspar, viz. the silica and alumina, become crumbly, and gradually fall into powder, called kaolin or porcelain earth, or are washed into clay and soil.

FELT. Labād, ARAB. Namdah, PERS. Felts are extensively manufactured throughout Southern Asia; those of Kandahar have many beautiful patterns. The best felt is from sheep's wool; the commoner kinds from a mixture of wool and goat's hair picked and cleaned. The 'un' or 'oon' is spread out evenly on a large mat made of guinea grass stalks, which is then rolled backwards and forwards, and pressed until all unite. They are used as carpets, cushions, bedding, horse clothing, and by nomades for warm lining for their hair tents, and vary in price per piece from 1 or 2 to 50 or 60 rupees. Patterns are formed by beating in or felting wools of different colours, and a not unpleasing effect is produced.—*Bellew; MacGregor*, p. 47.

FELUJAH. On the Euphrates, about 70 miles below Hit, is the modern castle of Felujah, situated 29¾ miles W. 2° N. of Baghdad. The average width in this part of the river decreases a little, being only about 250 yards, with an ordinary depth of 20 feet; and there is a current of less than 2½ miles per hour in the flood season, when the river forms many islands, without wood. Above Felujah, at 5¾ miles S. 60° W. from it, the derivation called the Saklawiyah takes place. This stream crosses Mesopotamia by a tortuous eastern course on the north side of Akar-Kuf, and enters the Tigris at a point 5 miles below Baghdad; but until altered by Daoud Pasha to avoid the danger of inundations, it joined the Tigris a little above the city. The distance from river to river (by the course of the Euphrates steamer in passing, under Lieut. Lynch, in 1838) is about 45 miles. See Karej.

FENG-SHUY. CHIN. The geomantic influences of the locality.

FENNEL SEED, Nigella sativa.

Zadianuj, Razianuj,	ARAB.	Mayuri, .	GUJ., HIND.
Nan-nan-ya-wet,	BURM.	Adas, . .	JAV., MALAY.
Sian-hwui-hiang,	CHIN.	Badian? Siah-dana,	PERS.
Sonf, ...	DUKH.	Madhurika, . .	SANSK.
Fenouil, ...	FR.	Dewadureo, . .	SINGH.
Wurriali, .	GUJ., HIND.	Perun-siragam, . .	TAM.
Kala jira, ,,	,,	Pedda jillakara, . .	TEL.

A variety is cultivated in the S.E. of Asia, and the natives regard its black aromatic seeds as stomachic, carminative, and as a condiment. Indeed, they were formerly used as a pepper. The seeds put amongst linen are supposed to keep away insects. They yield by expression a dark-coloured fragrant oil. The Hebrew word, which in Isaiah is rendered fitches, designates this plant; but not that in Ezekiel, where the original word for fitches signifies spelt, a species of wheat.—*Mason; Ainslie; Madras Exh. J. Rep.*

FENUGREEK SEED, Trigonella fœnum-græcum.

Helbeth, . . .	ARAB.	Shemlit, . . .	PERS.
Menta-soppu, . .	CAN.	Alforvas, . . .	PORT.
Mentia, ...	,,	Oolowa, ...	SINGH.
Fenugrek, ...	FR.	Vendium, . . .	TAM.
Methi, ...	HIND.	Mentuloo, ...	TEL.

Cultivated in India. Flowers small and white. Seeds deemed tonic and carminative; used as a condiment and in curries. An oil is extracted from them.—*Voigt*, p. 209.

FERALIA of the Romans is the Sraddha of the Hindus.—*W.*

FERGUSSON, JAMES, Architect, C.I.E., D.C.L., LL.D., F.R.S., F.R.G.S. and M.R.A.S., was born at Ayr, in Scotland, in 1808, and was for a short time a partner in a mercantile firm in Calcutta. During the years 1836–1842 he travelled through India, investigating the history, forms, and architectural antiquities, examined the eastern caves at Cuttack and Mahaballipur, also those of Ajunta, Ellora, Karli, Kenheri, Elephanta, and others; and he has published the result of his researches into the origin of the architectural and sculptured remains of India, in volumes of the highest value to the ancient history of that country:—Illustrations of the Rock-cut Temples of India, 1845; Picturesque Illustrations of Ancient Architecture in Hindustan, 1847; Essay on the Ancient Topography of Jerusalem, 1847; Historical Inquiry into the True Principles of Art; Handbook of Architecture, 1855; On a Proposed New System of Fortification, 1849; Palaces of Nineveh and Persepolis Restored, 1851; History of the Modern Styles of Architecture, 1862, 1874; History of Ancient and Indian Architecture, 3 vols., 1865, 1874, 1876; Tree and Serpent Worship, 1868 and 1873; Illustrated Handbook for India, 1855, 1859; Rude Stone Monuments, 1872; Holy Sepulchre, 1865, 1871; Study of Indian Architecture, 1867; Temples of the Jews, 1878; Cave Temples of India, jointly with Mr. Burgess, 1880. In 1859 he was appointed one of the Royal Commissioners to inquire into the defences of Great Britain. 7th April 1871, the Royal Institute of British Architects presented him with the Royal Gold Medal, as the author who had distinguished himself by his architectural researches.

FERHAD, so conspicuous in Persian romance, contemporary with Khusru Parvez, or Chosroes (at the close of the 6th century), and that monarch's rival in the affections of fair Shirin, was a native of Kurdistan. He may be almost always recognised by the tishah or pickaxe, with which, for the sake of his mistress, he fractured or excavated enormous rocks, and, according to tradition, reduced the rugged face of Mount Besitun into those extraordinary sculptures for which it is still remarkable. With his tishah, says the poet Nizami, he rendered the hardest stone, as it were, soft like wax.—*Ouseley's Travels*, i. p. 234.

FERIDUN, B.C. 700? a hero of Persia, whose legend is related by Firdusi in the Shahnama. Feridun is fabled to have been the son of Abtin and Firūnek, and to have been born in the reign of Zohak. Zohak, being warned by wise men that Feridun would overthrow his kingdom, sought to destroy the child. Feridun's father was killed, but the mother fled to India with the child, who was there brought up by a hermit. When sixteen years of age, Feridun learned from his mother the secret of his birth, and determined on revenge. He overthrew the king, and nailed him to a rock. Feridun, in this Iranian legend, is identical with Thraetaona, the Trita of the Veda. He is fabled to have killed the tyrant Zohak on the Demavend mountain of the Alborz, south of the Caspian, as Trita slew the demon Vritra.—*Bunsen*, p. 848.

FERINGI. HIND., PERS. A term employed by Mahomedans of India to designate Europeans. It is used derogatorily, but ought not to be so,

being derived from Fering, Europe, as Danai-i-Fering wa Dowlat-i-Hind, the wisdom of Europe and pomp of India. Peling is the Tibetan corruption of the word Firingi, itself a corruption of Frank, the oriental word for European.

FERISHTA, the literary title of Muhammad Kasim, styled Hindu Shah, also Ferishta, author of the Tarikh-i-Ferishta, a work considered superior to all the other general histories of India. He was born at Astarabad, on the shores of the Caspian, A.D. 1570, according to General Briggs, but according to M. Jules Mohl, A.D. 1550. His father, Ghulam Ali Hindu Shah, left his native country and came to Ahmadnaggur while Ferishta was a lad, then ruled over by the Nizam Shahi. Briggs supposes his death to have occurred A.D. 1612, when only 41 years of age. He seems to have accompanied Chand Sultan to Bijapur, where he lived under the Adal Shahi kings, and wrote the book on which several have been founded, viz. The History of Hindustan from the Earliest Times to the Death of Akbar, which was translated by A. Dow, 3 vols. 4to, London 1768; also The History of Dekhan from the First Mahomedan Conquests, and the History of Bengal to 1780, which was translated from the Persian by Dr. J. Scott in 1794; The History of the Rise of the Mahomedan Powers in India till A.D. 1612, translated from the Persian by Jo. Briggs, 4 vols. 8vo, London 1829. He also wrote many novels. His death is also supposed to have occurred in a period of famine while still only forty years of age. His work was translated by General Briggs of the Madras army, but the manuscript was burned when the Poona Residency was destroyed by Baji Rao, and had again to be re-translated by General Briggs.

FERNS, the Fougère of the French and Félce of the Italians. Flowerless plants, the Filicales of Lindley and Filices of other authors, belonging to the Acrogenæ. The species present infinite variety, in the form and division of their elegant leaves or fronds, the arrangement of the veins, and the form and general character of the clusters (sori) of minute fruit capsules, which are disposed upon the under surface or margin of the fronds. The rhizomes of the common brake (Pteris aquilina, *L.*) furnish a farinaceous food in times of scarcity. The male shield-fern, etc., are employed in medicine as anthelmintics, but Europeans in India largely cultivate exotic species as plants. In the table-lands they are met with, and in the hills and mountains of India they are abundant. The Dipteris Horsfieldii of Johne is the noblest of all ferns. Captain Beddome in 1863 issued a volume on the Ferns of Southern India, containing 84 genera. Species of the following occur in India:

Polypodiaceæ.
14 polypodium.
2 hemionitis.
1 notholæna.
4 aspidium.
4 asplenium.
8 pteris.
1 Lindsæa.
2 adiantum.
1 lomaria.
1 sphæropteris.
5 davallia.
2 acrostichum.
1 autrophyum.
1 meniscium.
1 tœnitis.
1 allantodia.
1 cheilanthus.
1 vittaria.
1 blechnum.

Gleicheniaceæ.
1 ceratopteris.
1 gleichenia.
1 hymenophyllum.
1 trichomanes.

Osmundaceæ.
7 lygodium.
1 schizœa.

Danaceæ.
3 Danæ.
2 marattia.
1 Kaulfussia.

Ophioglossacea.
4 ophioglossum.
1 helminthostachys.

Fern Root, Kieuh, CHIN. Species of Nephrodium and Pteris are common in China, and are included under this name. A kind of arrowroot is prepared from the rhizomes, which are also eaten, after proper washing and cooking.

Fern Spores, Hai-kiu-sha, CHIN. This fern plant grows in Hu-nan Sze-chuen, and Che-kiang, in China, where the name of the spores means golden sea-sand. It is an exceedingly light, fine, reddish-brown powder, which burns almost as readily as lycopodium.—*Smith.*

FEROHZAD BAKHTYAR, the 29th and last but one of the Sassanian kings, A.D. 631. Under his successor, Yezdegird, the kingdom fell to the Mahomedans, A.D. 632.

FERONIA ELEPHANTUM. *Roxb.*

Crataeva vallanga, *Kon.* | Anisifolius Rumphii.

Kat bel, ... BENG.	Kupittha, ... SANSK.
H'man, ... BURM.	Ma-koit, ... SIAM.
Bilva-titha, . . . CAN.	Dewul, ... SINGH.
Kavita-vriksea, . ,,	Vela, Villa, . . . TAM.
Elephant apple tree, ENG.	Vilam, Pitta vula, . ,,
Wood ,, ,, ,,	Vellanga, ... ,,
Koit ka jhar, . . HIND.	Velaga, Kapitthamu, TEL.
Bhuin-koit, Kawtha, ,,	Parupu velaga, . . ,,
Bhu kupittham, SANSK.	Nela, Puli, . . . ,,

The large, tall, wood-apple tree, one of the Aurantiaceæ or orange tribe, is widely diffused in India. Its wood is white, hard, and durable. A specimen which was tried bore 360 lbs. In Vizagapatam it is much used in house-building, but said not to be very durable. It could possibly be creosoted, so as to withstand exposure. Its spheroidal fruit when ripe contains a dark brown, agreeable subacid pulp. When an incision is made in the trunk, a transparent oily fluid exudes, which is used by painters for mixing their colours. Both leaves and flowers have a strong odour of anise, and the young leaves are given in the bowel complaints of children as a stomachic stimulant. It yields a large quantity of a clear white gum, much resembling gum-arabic in its sensible properties, and forms the well-known East India gum-arabic; and, from its ready solubility without residue, it gives the best mucilage for making black ink. The rather acid pulp contained within the hard shell of the fruit is eaten with sugar, but is not much prized.—*Ainslie; Roxb.; Rohde; M. E. J. R.; Gibson's Report; O'Sh.; Wight.*

FEROZ. PERS. Victory. Hence Ferozabad, Ferozpur, Ferozshahr, as names of towns; Feroz and Ferozshah, names of persons and kings.

FEROZ KOHI, a tribe of the Aimak, a small number of people, about 8000, dwelling on the steep hill N.E. of Kale No, and from their inaccessible position afflict their whole neighbourhood with their robbing and plundering. Kale No, on the summit of the mountain, and the fortified places of Darzi, Kutch, and Chaksaran, are considered similar to the whole nests of the Bakhtiari and Luri in the environs of Isfahan. They have a resemblance to the Hazara, but their forehead, chin, complexion, and figure are less Turanian. They are decidedly Iranian. They take their name, the Feroz Kohi, after the city of that name, about 63 miles from Teheran. Timur settled them by force in Mazenderan, but they soon returned to their own country. They have a few cattle, and they sow a little, and plunder the caravans travelling on the Maimani road, or make inroads on the scattered tents of the Jamshidi.—*Vambery.*

FEROZPUR, in lat. 30° 57′ 1″ N., long. 74° 38′ 4″ E., in the Panjab, on the left bank of the Sutlej. The mean height of the station is 1120 feet.

FEROZ SHAH, in the neighbourhood of Ferozpur, in the Panjab. A battle was fought here on the 21st and 22d December 1845, between the British and the Sikh.

FEROZ TAGHALAQ SHAH, king of Dehli, was grandfather of Sultan Mahmud, whom Timur conquered. It was this king (A.D. 1351–1388, A.H. 752–790) who removed the lat or pillar, according to one account, from near Khizrabad, immediately west of the Jumna, at the foot of the Siwalik Hills, to Dehli, and erected it in the centre of his palace. This column is alluded to by Chand as 'telling the fame of the Chohan,' but he says it was 'placed at Nigumbode,' a place of pilgrimage on the Jumna, a few miles below Dehli, whence it must have been removed to its present singular position. The name of Beesildeo (Visaladeva) heads the inscription on the pillar. The pillar is now known as one of the Dehli Lat, also the Golden Lat, so called from the gilt kalasa, pinnacle or ball, which Feroz Shah placed on its summit. This monolith, like the kindred pillar at Allahabad, was in the first instance exclusively devoted to the exhibition of a counterpart text of the edicts of Asoka, but succeeding generations have taken advantage of the ready prepared monument to supplement a record of their own prowess. The other stone pillar at Dehli was brought from Mirat. His long reign was distinguished by the erection of many mosques, serai, colleges, hospitals, public baths, wells, aqueducts, and reservoirs for irrigation. He excavated a fine canal, running from the river Jumna through the province of Dehli to the Kaggar river, which subsequently fell into disuse; but 200 miles of it were restored by the British in the middle of the 19th century. The public works executed in his reign were 50 dams across rivers, and 30 reservoirs to promote irrigation, 40 mosques, 30 colleges, 100 caravansaris, 100 hospitals, 100 public baths, 150 bridges, besides many other buildings.—*Tod's Rajasthan*, ii. p. 452; *Orme*. See Lat.

FERQUEH, amongst the Afghans, means a tribe. It is probably from the Arabic Farq, separation. Farqah, a tribe or community.

FERREOLA BUXIFOLIA. *Roxb.* iii. p. 790.
Maba buxifolia, *Pers.*

Illumbilli maram, . TAM. | Eroombala maram, TAM.

This plant grows among the Circar mountains to the size of a small tree, but in the low countries it is only a shrub. The wood is dark-coloured, remarkably hard and durable; when its size will admit, it is employed for such uses as require the most durable, heavy wood. Its small red fruit, containing one seed when ripe, is pleasant to the taste, and is well known over India.—*Roxb.; Ainslie; Mr. Rohde's MSS.; Voigt.*

FERRY. The ferries at rivers in the S. of Asia are crossed by means very various. On the Tigris, Euphrates, the Upper Indus and its affluents, the practice of 3000 years still continues, for Xenophon's ten thousand were ferried over on inflated skins, and three slabs in the British Museum show the representation of the king of Assyria crossing the Euphrates in this mode, which, on the rivers named, still continues. Canoes are of common use on the ferries; two pieces of the bole of a palmyra tree, scooped out and blocked with clay at the end, and fastened together, are used in the Circars, but the wicker and leather coracle traverses most of the rivers in the Peninsula of India. The ferry-men on the Kistna river in the Peninsula are the Koli race, stalwart men. The Kili-Katr or Maddakpur race are also Kabl-gira or ferrymen.

FERULA ASAFŒTIDA. *Linn.* Asafœtida.
Narthex asafœtida, *Falc.*

Hiltit, Anjadan, . ARAB. | Hingiseh, ... HIND.
Samagh-ul-mahrus, „ | Yang, . . . KASHM.
Juwifeh, ... „ | Inguva, Hingu-patri, TEL.
Anguza, Hing, . . HIND.

This plant grows in all the mountainous countries in the north, the south, and the east of Persia, between Persia and Tibet, and in Lar, Khorasan, Afghanistan, up to India. It grows in the neighbourhood of Herat, mountains of Daristan and Baluchistan, and on the Hindu Kush at 7000 feet. Dr. Cleghorn says the asafœtida plant occurs in Pangi, and in the localities given for daphne and desmodium (as yielding material for making paper in district jails). Dr. Stewart got this plant in Khagan (Jhelum basin) at about 6000 feet; and Dr. Cleghorn, he says, mentions specimens of it as being brought to him on the Upper Chenab at over 8000 feet, but is not known there. This plant has been conjectured to have produced the Lasser of the ancients (see Astrantia), which, however, is now ascribed to a Thapsia. The gum-resin asafœtida is obtained by slicing the roots. A milky juice exudes, which dries rapidly into a fetid, pasty, bitter, and pungent mass. The odour of asafœtida has gained for the gum-resin the epithet of the devil's dung; the taste is bitter, acrid, and very durable. Asafœtida occurs in commerce in shapeless masses of waxy consistence, with small transparent, brittle, and white tears. It is used in medicine, and by all classes of Hindus as a condiment with their food.—*Stewart; Cleghorn, Panj. Rep.; Powell.*

FERULA GALBANIFERA. *Nees and Eberm.* Coasts of the Mediterranean, the Caucasus, etc.; yields copiously a secretion which dries into a gum-resin, supposed by some to be a galbanum. Professor Don states that galbanum is yielded by quite a different genus, called by him Galbanum officinale.—*Eng. Cyc.; Hogg*, p. 388; *Von Mueller.*

FERULA ORIENTALIS.—? *O'Sh.*

F. ammonifera, *Fee.* | Feshook, . . . ARAB.

It grows in Asia Minor, Greece, and Morocco; supposed a source of gum ammoniacum.—*O'Sh.* 364.

FERULA PERSICA. *W.* F. Sagapenum, *Fee.*

Sugbinuj, . . . ARAB. | Sugafun, . GR., PERS.
Ee-sus of . . BOMBAY. | Kundel, ... HIND.

A native of Persia; stem about two feet high. According to some authorities, it produces sagapenum. Nees von Esenbeck and Lindley considered it as one of many plants from which asafœtida is procured. Sagapenum is found in masses. Its odour resembles that of garlic and asafœtida; its taste is hot, nauseous, and rather bitter. It is sometimes adulterated with bdellium, gunda-birosa, and other similar gum-resins or turpentines. It is collected in the same manner as asafœtida; sells at 4 rupees the pound. The medical uses of sagapenum are the same as those of asafœtida, but it is considered less energetic, and is but little employed.—*O'Sh.* p. 363.

FESTIVALS of the Hindus, of the Mahomedans, Burmese, and of the Chinese, are connected with their religions. At the Hindu Amavas, or festival of the new moon, Hindus eat only one meal. It is a monthly mortuary service, at which prayers are offered up for their parents, grand

and great-grand-parents. In the new moons of January, July, and August, they make offerings to the manes, of sweet food. The Thivasam is an anniversary commemoration of their parent, grand or great-grand-parent. The Mahalya Putcham of the month of August is a mortuary service. Avani Avattam is a half-yearly service. With Mahomedans, the new year festival of the Maharram, and those of the Ramzan and Bakreed are their chief. The Chinese new year falls on the 15th of Aquarius, their feast of lanterns on the first full moon of the new year.

FETISHISM is the belief that external phenomena can be controlled by witchcraft; the stage of religion in which man supposes he can force the Deity to comply with his desires. Totemism is the worship of natural objects.

FEUD. Hindu Wer; Weree, a foe. The Saxon term for the composition of a feud, Wergeldt, is familiar to readers. In some of the Rajput states the initial vowel is hard, and pronounced Ber. In Rajasthan Ber is more common than Wer, but throughout the south-west Wer only is used. In these we have the origin of the Saxon word War, the French Guer or Guerre. The Rajput Wergeldt is land, or a daughter to wife.—*Tod's Rajasthan*, i. p. 181.

FEUDATORY, a term applied, since A.D. 1860, to the rulers of territories enclosed within British districts. They are chiefly in the Panjab, Bombay Presidency, Central and N.W. Provinces; and in 1881 their subjects were 13,254,402 souls. There are, besides, several Native States in Central India, Baroda, Cochin, Hyderabad, Mysore, Rajputana, and Travancore, with 38,748,522 inhabitants. Prior to the assumption by Queen Victoria, Empress of India, of the direct rule of British India, the East India Company designated the princes by their hereditary titles, or by their household or family or territorial names, as the Grand Moghul, the Gaekwar, Sindia, the Nizam, Holkar, Walajah, etc., but this was changed to the term Feudatory. In 1881 there were many of these, either independent sovereigns, or ruling with restricted powers. In Rajputana are rulers with the titles of Raja, Maharaja, Rana, Maharana, in a region of 120,000 square miles in extent, in 20 principalities, and a population in 1881 of 10,268,392 souls, the chief of them being of Udaipur (Oodeypur), Jodhpur, and Jeypore, and the whole of them could assemble 70,000 foot and horse; the other Rajputana States being Banswara, Bhurtpur, Bikanir, Bundi, Dholpur, Dungarpur, Jeysulmir, Jhalawar, Kerrowlee, Kishengarh, Kotah, Lawa, Partabgarh, Shahpura, Sirohi, Tonk, and Ulwar. The Nizam of Hyderabad supports a contingent of about 7000 of all arms, and has besides 36,890 infantry, 8200 cavalry, and 725 guns. Indore, where the Maharaja Holkar rules over the Malwa population of a million, and an army of 10,000 men; the Maharaja Sindia rules at Gwalior, over a state of 30,000 square miles, and a population of three millions, and has an army of about 24,000 men. The Gaekwar ruler of Baroda has about 20,000 men. In 1874 the Feudatories had an aggregate revenue of 15 millions sterling, and 315,000 soldiers, with 3500 guns. The Maharaja of Kashmir has 20,000 of all arms. Nepal is tributary to China, but could at any time bring 100,000 armed men into the field. These two states have treaties with Great Britain.

The *Akulkote* chief is a Mahratta Sudra of the Bhonsla family, to which belong also the Kolhapur chiefs. He is addressed as Rao Sahib Mihrban.

Arcot.—In the earlier and middle parts of the 18th century, when Mahomedan generals, the British, and the French, were striving for supremacy in the Karnatic, the rulers for the time were styled Nawabs of Arcot. This was the title of a family whom the British favoured, and whom the treaty of Paris of 1751 acknowledged, though they style themselves Walajah, of high dignity. The last Nawab died in 1855, but his uncle, Prince Azim Jah Bahadur, was since then created Prince of Arcot, and this title descended to that prince's son, who was styled Umdat-ul-Umra, Amir-ul-Umra, Madar-ul-Mulk, Azim-u-Dowlah, Asad-u-Dowlah-al-Angliz (Zahir-u-Dowlah), Khan Bahadur, Zu-ul-Fiqar Jung, Fitrat Jung, Sipah Salar, Amir-i-Arkat and (?) Hind, G.C.S.I.

The *Banaganapilly* ruler is a Mahomedan Syud, and is styled Nawab of Banaganapilly, Khan Bahadur.

The *Bengal* Subahdar is not ruling. In 1763, Jafar Ali Khan was placed by Clive on the musnud as Subahdar of Bengal, Behar, and Orissa; and in 1880 the holder of the titular dignity was the eighth in succession, and styled Nawab Mantazam-ul-Mulk, Mohsan-u-Dowlah, Faridun Jah (name), Khan Bahadur, Nasrat Jang.

In Bengal there are many great Hindu landed proprietors, as the Raja of Benares, the Raja of Bardwan; and numerous chieftains with territorial possessions, as in Munipur, and amongst the Garo and Khassya, and in Assam on the east, and in the west amongst the Santal, Kol, etc.

In Calcutta, the capital of Bengal, there are many families with titular appellations, some of them patronymic, some of Mahomedan and some of Hindu origin, such as Deb; Sri-sri-Raja Deb-Bhao Ballanda; Kumar; Rai, Raja, Rani, Maharaja, Maharani, Rai Bahadur, Bahadur, Raja Bahadur, Maharaja Bahadur; Malik, Nawab. A Hindu lady, a great patron of learning, has recently been created a Maharani.

The *Bhadauria* family of the Agra district often rendered good service to the British; and Lord Lake bestowed on them the pargana of Atair as an altamgha jaghir, but it was subsequently resumed.

Bhownaggar rulers are styled Thakur, and have the title of Rawul.

Bhopal is ruled by a lady of the Mahomedan faith, Shah Jahan Begum, G.C.S.I., Begum of Bhopal. The titular designations of the Bhopal chiefs are, Myan, Rao, Rawut, Raja, Maharaja, Bahadur, Nawab, and Thakur.

Bhurtpur, in Hindustan, has a Hindu family of the Jat race, the ancient Getæ. Their title is Brijandar Siwai Bahadur, Bahadur Jung, Maharaja of Bhurtpur. The Jat are an earnest, brave race.

Bikanir, in Rajputana, is ruled over by a Rahtor Rajput, styled Maharaja of Bikanir.

Bobali, a great landed estate in the Northern Circars, is held by a Hindu, styled Raja Sahib Mihrban Dostan, Raja (name) Bobali Rana Garu.

The *Bundi* ruler is styled Maharao Raja of Bundi.

In the *Canarese*-speaking country, the chiefs are largely of Mahratta origin. Jamnepa Kara means a public benefactor.

Chichli has a Hindu ruler, styled Raja Bahadur;

his seal bears the titles Sado-sahai, Nar Singh, Nizam Singh, Sut-Bijai Bahadur Singh, son of Nizam Singh. His insignia is a yellow or pitambar flag, and chowri and staff.

The *Cochin* sovereign is a Hindu, whose insignia is a palanquin, with umbrella, lamp, and chank shell, entitled His Highness Rama Varma, Raja of Cochin, K.C.S.I.

Holkar, a sovereign ruling at Indore, in Malwa, is of the Dhangar or shepherd tribe. He is styled Maharaj, Dhiraj, Rajeshur, Siwai, Tukoji Rao Holkar Bahadur, K.G.C.S.I. Since 1836, each succeeding ruler has been adopted according to Hindu rites. Jeswunt Rao died 1811, and was succeeded by his son Mulhar Rao, who died in 1833, childless. Martand Rao was adopted as his successor, but he was deposed by Hari Rao, who died in 1843, also childless; and his adopted son and successor, Khande Rao, died in 1844, and was succeeded by adoption by Tukoji Rao (ruler, 1881).

Hyderabad, in the Dekhan, has been for nearly 200 years under a Mahomedan family, now styled the Asof Jahi. The state is in the centre of the Peninsula, and is formed out of parts of the Gond, Teling, Canarese, and Mahratta countries. The sovereign is generally known as the Nizam, but is styled Muzaffar-ul-Mumalik, Rustum-u-Dauran, Arastah-i-Zaman, Asof Jah, Nizam-ul-Mulk, Nizam-u-Dowlah, Mahbūb Ali Khan Bahadur, Fatah Jung.

The *Jeypore* Maharaja is a Kachwaha Rajput.

The *Jhala* ruler at Drangada in Kattyawar is also a Rajput family.

Jodhpur, under a Maharaja, a Rahtor Rajput.

Kalastri or Kalahasti is a zamindari estate near Madras, held under a perpetual (cowl) agreement (Sanad-i-Milkiat Istimrar). The proprietor is styled Raja Damara Kumara (name), Naidu Bahadur Varu. One of them died March 1881.

Kapurthalla, a family known as the Ahluwalia, from the village of Ahlu, near Lahore. It is a Sikh chieftaincy of 800 square miles in the Panjab, and of 850 square miles in Oudh. Revenue, 17 lakhs.

Kashmir and *Jamu* are ruled by a family of Jamwal Rajputs, by treaties of 6th March 1844 and 1st January 1877, styled Maharaja Indar Mahindar Bahadur, Sapar-i-Sultanat, Mushir-i-Kaisar-i-Hind. The area of Jamu and Kashmir is 68,000 square miles; population, 1,600,000; chief towns, Jamu on the Ravi, Srinagar in Kashmir, and Leh.

Kavatnagar, a great zamindari near Madras, held by a family who rose from obscurity in the 17th century, known in history as Bomraz.

Kolhapur is held by a descendant of the great Sivaji, a Mahratta ruler of the Bhonsla family, with the title Chatrapati Maharaj.

Kotah ruler is a Chauhan Rajput.

Cutch ruler is of the Samma family, Jharijah Rajputs.

Mahratta chiefs under the Poona collectorate, in the Dekhan and in the Southern Mahratta country, etc., have recognised titular names, but many of them have official designations, as Pant-Prithinidi, Pant-Amatya, the Ghatge chief of Kagal, chief of Ichalkaranji, chief of Sangli, chief of Mudhol, the Ghorparay, Patwardhan, the Vinchurkar, etc.

The *Mysore* kingdom is ruled by a Hindu sovereign, under the partition treaty of 1799, framed after the fall of Seringapatam. The present ruler, Chamrajendra Wadiar, born 1862, was adopted by his predecessor, was installed 23d September 1868, and placed in charge in March 1881. He is styled Maharaja Chamrajendra Wadiar Bahadur Raja of Mysore.

Nepal has treaties with India as an independent kingdom, but it is tributary to China. The titles of the late Maharaja Jung Bahadur were Thong-lin-pimma Kokang-vang-syan, Commander of the Army, the Valorous, Perfect in Everything, Master of the Military Affairs, Maharaja (name) Jung Bahadur. The titles used in Nepal are, however, mostly of Hindu origin, as Adiraj, Maharaj, Kunwar, Rawal, Rawat, Sah, Bahadur.

The *Nowanagar* chief is styled Maharaja Jam Sahib Sivasthan Nowanagar.

Oodeypur is ruled by a Suryabansi Rajput, His Highness Maharana Sujjun Singh, born 9th June 1858. They are mentioned in A.D. 720, and are deemed Hindus of the highest rank.

The *Parsee* race is chiefly dwelling in parts of the Bombay districts; they were refugees from Persia in the fourteenth century. Her Majesty created Jamsetji Jijibhoi a baronet of the United Kingdom. The Rustomji Cowasji family claim as a titular appellation, Davar, said to mean in the Zend or Pehlavi, a chief or judge. That family has also assumed the designation of Modi, meaning provision supplier. Indeed, except their constant use of the Hindi term Jee added to a name of Persian origin, the Parsees are proud of the trades by which they acquired wealth, and in Bombay are the Bottlewala.

Patiala is a Sidhu Sikh chieftaincy. It has an area of 5412 square miles, with a population of 1,650,000, and 44 lakhs of revenue. The ruler is styled Farzand-i-Khas-i-Daolat-i-Anglizia, Mansur Zaman, Amir-ul-umra, Maharaja, Dhiraj, Rajeshur, Sri Maharaja Rajgan Mahandar Bahadur.

Puducottah has an independent chief, His Excellency the Raja Tondaman Bahadur, of the highly predatory Kollari race; indeed, their tribal name means thief. But they devotedly served the British in the wars of the 18th century in the southern part of the Peninsula, and this small territory remains to them. His Excellency's armorial bearings is a lion, a feline animal not known in that part of India.

In *Rewa Kanta* the titles in use are Babi, Maharana, Maharawul.

Sandur, in a valley 37 miles from Bellary, is ruled by an independent Mahratta chieftain of the Ghorpara family, who is styled Siva Shanmukha Rao, Ghorpara, Mamlakat Madar, Senapati, Raja of Sandur.

Sind, now British territory, has chiefs with titles both from Hindu and Mahomedan sources. Many of the former are tribal, as Numra, Jat, Kalmati, Jokia, Soda, Talpur, Kulhora, Jam, Rao, Thakur, Wadero; also Arbab, Agha, Makhdum, Malik, Rana, Khan, Bahadur.

Sindia, of Mahratta origin, is an independent ruler, capital Gwalior. The present (1883) sovereign's name is Jyaji Rao Sindia. His many titles may be given in diglot, in the following form:—

Mukhtar-ul-Mulk, The absolute executive authority of the country.
Azim-ul-Iqtadar, The Mighty in Power.
Rafi-us-Shan, The High in Pomp.
Wala Shikoh, The Exalted in Splendour.

Muhtasham-i-Daoran, The Magnificent One of the period.
Umdat-ul-Umra, The Cream of the Nobles.
Maharaj Dhiraj, The Great Chief.
Ali Jah, The Chief par excellence.
Hissam-us-Saltanat, The High in Dignity.
Maharaja Jyaji Rao Sindhia, Bahadur, Sri Nath, The Great Chief Jyaji Rao Sindhia, The Valiant, The Lord.
Mansur-i-Zaman, The Conqueror of the Age.
Fadvi Hazrat, Malikah Muazzamah Rafi-u-Darjah, Inglistan, G.C.S.I., Vassal of Her Majesty the Honoured and Exalted Queen of England, Grand Commander of the Most Exalted Order of the Star of India.

Travancore is ruled by a Hindu sovereign, whose family and most of whose subjects follow the law of maternal inheritance. The regal insignia is a chank shell; and the titles of the Maharaja are Sri Padmanabhadasa, Vanji Bala Rama Varma, Kula Shekara, Kiritapati, Manne Sultan, Maharaj Raja Rama, Raja Bahadur Shamshir Jung, G.C.S.I., Maharaja of Travancore.

Vencatagiri is a great zamindari near Madras. The proprietor's titles are Raja Mashafaq, Mihrban, Karmfarma-i-Mukhlasan, Raje Velugoti Kumara Zachama Naidu Bahadur, C.S.I., Panj Hazar Mansabdar.

The *Vizianagram* Maharaja is of Rajput descent, and a great landed proprietor or zamindar in the Northern Circars. The grandfather of the present holder never submitted to the British, and died in the wilds of the zamindari. His son, a mere child, who died in 1880, was brought into British territory and placed in possession of the estates. The titles of the family are chiefly of Persian and Arabic words, with vowels added to give Telugu terminations, Maharaja Sahiba Mihrban Mashapaku, Kadrdan, Karmfarma-i-Mukhlasan Maharaja Mirza, His Highness (name) Sri Vizia Rama Gajapat Raju Manya Sultan Bahadur, K.C.S.I.

The *Zamorin* of *Calicut* is the inheritor of a title famed at the time of the arrival of the Portuguese, but whose ancestors lost their position in the subsequent strife with those Europeans and with the Mysore State. In 1766, the Zamorin, being beleaguered by Hyder Ali, he set fire to his palace, and voluntarily perished in the flames. His title, Raja Poomthurakoo Koonalakonatiri, does not contain the term by which the ruler is known to Europeans, and which is supposed to be a lingual variation from Samundar, the ocean. Since 1766, the Zamorins have been tributary, first to Mysore, and since 1799 to the British.

FEY-YUE-LING, a gigantic mountain on the frontier of the central empire of China, rising like an advanced post of the mountains of Tibet. It rises almost perpendicularly, and presents to the eyes of the traveller many peaks. During the whole year it is covered with snow, and surrounded by clouds that reach to its very foot. The road is frightful, and passes over rocks and chasms; it is one of the most difficult in all China, and no place of rest can be found on it.—*Huc, Chinese Empire*, i. pp. 2–16.

FEZ, a red cap worn by many of the Turks of Europe, Egypt, and W. Asia, also by many Greeks. The fortunes of the fez make a curious chapter in the unwritten history of clothes. It is now a symbol or a survival of Islam and of oriental manners. The great reforming Sultan Mahmud put down the turban, as he put down the janissaries. He made all civil and military officials adopt the fez, while the turban only survived as a head-dress to be worn in the seclusion of the haram, or as an ornament carved in stone above the graves of the faithful. The very ulema were compelled in 1837 to renounce the turban for the fez. It was like stripping a bishop of his apron, or compelling the higher clergy to attire themselves in trousers. The ulema revolted on Mahmud's death, and returned to the turban. They would not wear the head-dress of the Gabar, for the red fez is originally the coiffure of the Greeks and Albanians.

FIBROUS MATERIALS. Fibres are either cellular in their structure, like the cotton, Bombax cotton, madar fibres, or they consist of woody tissue or fibre, like the lotus fibre, flax, hemp, jute, sunn, etc. But the cellular fibres are not the product of stem or leaves, but of the seed-vessels, etc. Plants whose stems and leaves are simply formed of cells or vessels yield no fibres. On the outbreak of the war with Russia in 1855, the attention of British manufacturers was directed towards the probable effect which the stoppage of the Russian trade would produce upon the supply of flax and hemp, the greater portion of which had been derived from that empire. Their importations of flax from all parts, in 1853, had amounted to 94,169 tons, and Russia alone contributed 63,399 tons towards that quantity; and out of 63,142 tons of hemp imported during the same year, 41,819 tons were obtained from Russia alone. The total value of these importations, computed upon the average rate of the year, amounted in round numbers to £3,500,000 sterling. Under these circumstances, attention was forcibly directed towards India as a possible source of supply, and the result was that Indian fibres were proved to possess all the necessary intrinsic properties, while in point of flexibility and strength some of them are infinitely superior to Russian produce. Very much was then done by Dr. John Forbes Royle, Dr. Alexander Hunter, the British Government, and the Governments of India, to extend our knowledge of the fibrous and textile materials of South-Eastern Asia, and the result was to make generally known that each district of India and of the south and east of Asia has its own particular fibres, all largely utilized by the people, and amongst the most deserving of attention may be enumerated the following:—

Abelmoschus esculentus.
A. ficulneus.
Abroma augustum.
Abutilon Indicum.
A. polyandrum.
A. tomentosum.
Acacia leucophlæa.
A. Arabica.
Agave Americana.
A. cantala.
A. diacantha.
A. viridis.
A. vivipara.
A. yuccæfolia.
Ailantus Malabaricus.
Aletris nervosa.
Aloe Indica.
A. perfoliata.
Ananas sativus.
Andropogon involucrum.
A. schœnanthus.
A. muricatus.
Arenga saccharifera.
Antiaris saccidora.
Areca vestiaria.
Artocarpus, several species.
Arundo donax.
Bambusa arundinacea.
Bauhinia racemosa.
B. diphylla.
B. Vahlii.
B. tomentosa.
B. scandens.
Boehmeria nivea.
B. tenacissima.
Borassus flabelliformis.
Bromelia, several species.
Broussonetia papyrifera.
Butea frondosa.
B. superba.
Callicarpa cana.
C. lanata.
Calotropis gigantea.
C. Hamiltonii.
C. procera.
Cannabis sativa.
Carex Indica.
Careya arborea.

FIBROUS MATERIALS.

Caryota urens
Chamærops humilis.
C. Ritchiana.
Cordia obliqua.
Cocos nucifera.
Corchorus olitorius.
C. capsularis.
C. fuscus.
Corypha, several species.
Crotalaria Burhia.
C. juncea, sunn.
C. tenuifolia.
Cyperus textilis.
C. tegetum.
Dæmia extensa.
Daphne bholua.
D. cannabinus.
D. Gardneri.
Decaschistia crotonifolia.
Desmodium argenteum.
D. tiliæfolium.
Eriolæna Candollii.
Eriodendron anfractuosum.
Eriophorum cannabinum.
E. comosum.
Erythrina Indica.
Ficus Mysorensis.
F. religiosa.
F. racemosa.
F. Roxburghii.
F. venosa.
F. Indica.
F. oppositifolia.
Fourcroya gigantea.
GirardiniaLeschenaultiana
Gossypium Indicum.
G. acuminatum.
G. herbaceum.
Grewia Asiatica.
G. tiliæfolia.
G. rotundifolia.
G. didyma.
G. oppositifolia.
Guasuma tomentosa.
G. ulmifolia.
Hibiscus cannabinus.
H. fragrans.
H. furcatus.
H. macrophyllus.
H. sabdariffa.
H. striatus.
H. vesicarius.
H. rosa Sinensis.
H. vitifolius.
H. lampas.
Isora corylifolia.
Juncus, *sp.*
Lodoicea Seychellarum.
Linum usitatissimum.
Maranta dichotoma.
Marsdenia Roylei.
M. tenacissima.
Mimosa Intsia.
Musa paradisiaca.
M. sapientum.
M. textilis.
Myssiessya hypoleuca.
Nelumbium speciosum.
Orthanthera viminea.
Pandanus odoratissimus.
Papyrus pangorei.
Paritium macrophyllum.
P. tiliaceum.
Philadelphus, *sp.*
Phœnix acaulis.
P. dactylifera.
P. sylvestris.
Rhapis Cochin-Chinensis.
R. flabelliformis.
Saccharum sara.
S. munja.
S. officinarum.
Sanseviera Zeylanica.
Salmalia Malabarica.
Sesbania aculeata.
S. cannabina.
Sida Asiatica.
S. graveolens.
S. Indica.
S. rhomboidea.
S. rhombifolia.
S. tiliæfolia.
S. periplocifolia.
S. populifolia.
Strychnos potatorum
Similax ovalifolia.
Sterculia guttuta.
S. ornata.
S. villosa.
Terminalia alata.
T. belerica.
Trigonella fœnum-græcum.
Triumfetta angulata.
T. lobata.
Tylophora asthmatica.
Typha angustifolia.
T. elephantina.
Ulmus campestris.
Urena lobata.
U. sinuata.
Urtica, several species.
U. heterophylla.
Vernonia anthelmintica.
Wikstræmia salicifolia.
Yucca angustifolia.
Y. gloriosa.
Y. aloifolia.

Dr. Royle, from the experiments he had made on all kinds of fibre, was able to state that dealers in Britain can have a cheaper and better supply of fine and course fibre from India, for ropemakers and fine spinners, than it is possible for them to get from any other country. He made the Himalayan hemp so soft, fine, and white, that it could not only take the place of St. Petersburg flax, but it could be used in place of Dutch flax; and twenty years' practical knowledge enabled him to say that it was capable of being spun into 60-shilling wrap yarn.

A further result of the inquiries then instituted, has been a yearly increase in the quantities of fibrous materials exported from British India to Europe and America, but chiefly to the United Kingdom. The more important of these is cotton, jute, coir, and the several commercial products shipped as hemp. The exports from India have been as under :—

Year.	Coir and Manufactures (not Cordage).		Cordage and Rope (excluding Jute).		Cotton, raw.		Hemp, raw.		Jute, raw, Gunny Bags, Cloths, Rope and Twine, etc.
	Quantity, Cwt.	Value, Rs.	Quantity, Cwt.	Value, Rs.	Quantity, Cwt.	Value, Rs.	Quantity, Cwt.	Value, Rs.	Value, Rs.
1874-75	152,745	13,72,803	...	...	5,600,086	15,25,73,416	80,050	6,66,539	3,48,55,221
1875-76	111,110	10,09,401	30,216	3,33,673	5,009,788	13,27,89,635	75,878	6,28,604	3,29,45,209
1876-77	176,086	18,98,845	24,193	2,65,603	4,557,915	11,74,61,836	85,207	7,58,856	3,35,61,242
1877-78	141,016	15,15,884	46,087	3,65,790	3,459,077	9,38,35,340	55,312	5,76,911	4,28,92,407
1878-79	189,782	18,77,268	32,812	3,55,377	2,966,060	7,91,30,458	45,628	4,62,334	4,89,88,604
1879-80	132,697	11,71,802	20,959	2,77,480	3,949,701	11,14,91,778	42,202	4,03,676	5,56,53,944

The abundance of fibrous materials in S.E. Asia may be illustrated by mentioning that while they are exported from India to the value of twenty to thirty millions sterling annually, the little of any kinds that are brought to India is almost all re-exported.

Southern India is abundantly productive of fibrous materials for every description of textile manufacture, from the coarsest packing cloth, to the finest cambric, lawn, or muslin. It would be impossible to say how far the cultivation of fibrous plants might be carried, and what would be the demand for them at Madras, if properly prepared for the market; but there is no doubt that a slovenly mode of preparing these materials has hitherto tended greatly to interfere with their sale in the European market.

In *Bengal* there are several plants adapted for the manufacture of textile fabrics. A species of Urtica, of whose fibres the much-admired grass-cloth of China is made, is cultivated in Rungpur, and, as rheea, is grown in Assam and Cachar. The pine-apple plant, too, from which a beautiful fabric is manufactured in Manilla, is indigenous in Sylhet and Assam, and is extensively cultivated about Dacca. The fibres of both plants are used by the natives for making fishing lines and nets; but up to 1851 no attempt had been made in Bengal to weave them into fine cloths. The same remark, perhaps, applies to munga (Sanseviera Zeylanica), the fibres of which are commonly used to make bowstrings. Calotropis gigantea possesses a fine silky fibre; and some varieties of the plantain tree, as the Musa textilis, yield fibres which, like the abaca hemp of Manilla, are capable of being converted into strong thread or cord, such as the Dacca spinners sometimes use for the bows with which they tease cotton. The people of Rungpur make cloths of the fibres of pat; and there can be little doubt that, if encouragement were given to them and other spinners and weavers in Bengal, they would, with the skill which they possess in these arts, also succeed in converting other materials into fabrics.

In the *Tenasserim Provinces* ropes are frequently made from the barks of Paritium macrophyllum, P. tiliaceum, Hibiscus macrophyllus, Sterculia guttata, and Sterculia ornata.

In *China* the staple summer crops are those which yield textile fibres. Jute is grown to a very large extent, and is used in the manufacture of sacks and bags for holding rice and other grains. A

gigantic species of hemp (Cannabis), growing from ten to fifteen feet in height, is also a staple summer crop. This is chiefly used in making ropes and string of various sizes; such articles being in great demand for tracking the boats up rivers and in the canals of the country.

Boehmeria nivea yields the well-known rheea fibre. In strength it exceeds the best hemp, and in fineness it rivals the superior kinds of flax. Its culture is well known to the natives of Assam, and in the districts of Rungpur and Dinajpur, being called kunkhoora. It is known in Burma, and is the pan of the Shans, the ramee of the Malayas and of Java, and the caloee of Sumatra. Its culture succeeded in Tenasserim, and is followed in Siam, as in other eastern countries and islands. It is identical with the highly valued article of commerce known by the name of China grass, the Chu-ma of the Chinese, and from which the famed grass-cloth of China is manufactured. Manure is useful and moisture essential to quick growth, as well as shade and some protection from storms, in order to allow it to grow to the height of eight feet, from which a six-foot fibre may be separated. Hence it is most common and succeeds best in the districts along the foot of the hills. It is grown from the separated roots, and may be cut down several times in the year, so that four or five crops may easily be obtained during the year, and the aggregate produce of an acre of ground be about twelve maunds. The different crops vary in strength and fineness, the earlier being the stronger and the latter finer. The culture is perfectly understood, and it is susceptible of easy and rapid extension. The expense seems to be about five rupees a maund. Various attempts have been made to bring it into demand as an article of commerce. Dr. Roxburgh obtained four plants from Bencoolen in the year 1803, and wrote that it was one of the strongest fibres he had met with. In 1811, Dr. Buchanan sent three bales of the fibres to Messrs. Sharp of Mark Lane, who reported that a thread spun of this fibre bore 252 pounds, whereas the weight required to be borne by Russian hemp of the same size, in His Majesty's dockyard, was only 84 pounds. The Society of Arts, in the year 1814, awarded a medal to Captain J. Cotton of the East India Company's service, for the introduction of this fibre, and medals and honourable mentions were awarded to several exhibitors from India and Java, at the Exhibition of 1851, for specimens of sailcloth, ropes, cables, finer kinds of cloth, and tablecloths; and it is used by the natives of the countries which have been mentioned for making nets and fishing lines; also stout cloth and some of finer fabric.

A plant, known to the people as Ban Rheea, or wild rheea, is very common in all parts of the Assam province in most of the forests. By proper management any quantity of young shoots can be obtained, and as the divided roots afford numerous shoots, and the plant can be propagated by slips as well as by seed, its cultivation for its fibre might be carried on with facility. It is cultivated largely by the hill tribes on the north-west of Yun-nan, and by the Singpho and Dhounnea of the north-east frontier to a small extent only for a coarse cloth, but chiefly for nets. It is the Leepeeah of Nepal. Thompson & Co., rope-makers, of Calcutta, said of it that it is all that can be desired for either canvas or lines, and only requires to be known to be generally used for that purpose. It was valued as being worth about £35 a ton in England. When made into a five-inch rope at Messrs. Huddart's works, it absorbed 1·7 of tar, and did not break until it bore nearly 9 tons weight.

Clean samples of the following fibres were taken, of equal weights and firmly tied at their ends, so as to be of equal lengths, and their strength tried in the India House Military Stores, 16th December 1853.

Petersburg hemp broke with	160 lbs.
Jubbulpur hemp, from Mr. Williams,	190 ,,
Wuckoo-nar fibre, Travancore,	175 ,,
Mudar or yercum fibre, common all over India,	190 ,,
China grass, Boehmeria nivea,	250 ,,
Rheea fibre, the same from Assam,	320 ,,
Wild rheea, Boehmeria species, from Assam,	343 ,,
Kote Kangra hemp, (no breakage at)	400 ,,

Dr. Royle gives the following tested strength of certain fibres:—

Wuckoo fibre, small cord, broke at	86 lbs.
Petersburg hemp cord,	170 ,,
Wild rheea cord, same size as Russian,	190 ,,
Rheea fibre cord, one thread larger,	230 ,,
Pound line of wild rheea,	510 ,,
Six-thread cord of Petersburg hemp,	505 ,,
Six-thread ratline of rheea, tarred,	525 ,,
Six-thread ratline of wild rheea, tarred,	530 ,,
Nine-thread ratline of wild rheea, tarred,	860 ,,
Twelve-thread ratline of wild rheea, tarred,	1120 ,,
One-inch rope of wild rheea,	1350 ,,
One-and-a-half-inch rope of wild rheea, tarred,	1900 ,,
One-and-a-half-inch rope of wild rheea, tarred,	1900 ,,
Two-inch cord of Russian hemp,	1800 ,,
Two-inch rope of rheea fibre, tarred,	2800 ,,
Twelve-thread rope of plantain, made in India,	864 ,,
Twelve-thread rope of pine-apple, made in Ind.,	924 ,,
Two-inch cord of Russian hemp,	1800 ,,
Two-inch rope of dhuncheo fibre, made in Ind.,	1850 ,,
Two-inch rope of agave, usually called aloe, made in India,	1900 ,,

Planting and Cleaning.—When plants are grown to produce fibres, they ought to be sown thick, to induce them to grow tall and slender and without branches, so that the straight stems may yield a greater length of fibre; and it may be laid down as a general rule that the softness or clearness of a fibre forms a good criterion of its strength, and *vice versa*.

As a general rule, every day's steeping of a fibre takes from its strength, and imparts more or less colour. Therefore, with plants having bark and woody fibres, the fibre can be purest extracted by beating them, at first, well with a wooden mallet, in order to loosen and allow the removal of the bark from the stalk, as it is generally on the inner surface of the bark that the fibres suitable for cordage usually occur. When the bark has been brought into a pulpy state, it should be well washed in clean water, to remove as much of the sap as possible, as this is the part in which the putrefactive process first begins. The leaves, stalks, or barks of plants should be cut when in full vigour, and in their bright green colour; when old, dried, or decayed, they yield coarse and stiff fibre. Only so much should be cut at a time as can be cleaned within two days, and the plants when cut should not be exposed to the sun, as the sap dries up, and the process of cleaning them is made more tedious. The sooner the sap, pulp, and impurities can be removed from the fibre, the cleaner and stronger will it be. If

a plant be well crushed or beaten soon after it is cut, it may be immersed in water for a night, and a good deal of the injurious part of the sap will be removed. These remarks are particularly applicable to the coir fibre. With the agave, yucca, fourcroya, and sanseviera, beat or crush the pulp with a mallet or crushing cylinder, or a brake, and scrape away the pulp and wash the fibres. In cleaning the fibres of pulpy plants, the plants should first be bruised or crushed, and the juice which exudes may be kept to be converted into a coarse kind of vinegar required in another process. For this part of the process the common sugar mill of India, with two perpendicular rollers and a channel to convey the juice into some convenient vessel, answers well, and the cost does not exceed ten rupees. Where this small sum cannot be afforded, and labour is abundant, the plant may be well beaten with wooden mallets on planks, until all the pulp is loosened. When it has assumed a pulpy consistence, the plant should be seized at both ends and well twisted on itself in various directions to squeeze out the sap. It should then be well washed in plenty of water, untwisted, and scraped on a board, in small handfuls at a time, with a blunt straight knife, or a long piece of hoop iron fastened into a wooden handle. When all impurities are thus removed, the fibres may be soaked for an hour or two in clean water, and then hung up in the shade to dry, the latter being a point of much importance, as exposure to the sun at first is apt to discolour them. By this simple process, fibres of great length, of a silky appearance, and of a good colour, can readily be prepared. The scrapings should be well washed, and set aside in the shade to dry as tow for packing, or as a material for making paper. This process is applicable to all fleshy or pulpy plants, such as those known as aloe plants, the agave and yucca, sanseviera and plantain. Prices have been obtained in England for fibres cleaned in this manner, double those offered for fibres sent at the same time, but which had been cleaned by the ordinary rotting process.

In order to save labour, the usual practice has been to steep the plants till the sap and vegetable juices are thoroughly decomposed, as the fibre can then in most instances be easily beaten or washed out; but this method, though applicable to a certain extent in cold climates, where decomposition takes place slowly, is found in India to be very injurious to the fibre, and to be almost inapplicable in warm climates, where fermentation often passes into putrefaction within three days, and the decomposed sap acquires acid and other properties, which not only deprive the fibres of their strength, but discolour them in such a way as to render them quite unfit for manufacturing purposes. Most vegetable substances contain, besides the fibrous tissue, sap, cellular tissue, and a little colouring matter. The sap consists usually of water, gum, fecula, and alkali, with occasionally tannin. When plants are dead or dried up, they pass into a red or brown, usually streaked with deep yellow and grey. It is often possible to detect a regular succession of colours in the different parts of the same plant, and a few very useful lessons may be drawn from them,—1st, That the pale yellow or greenish parts of a plant contain fresh, tender fibres; 2d, that the deep green parts of a plant contain fibres in full vigour; and 3d, that red or brown parts indicate that the fibre is past its prime and beginning to decay. In the latter case, the fibre becomes stiff, harsh, and often brittle. If plants be cut and exposed to the air or steeped in water, the same succession of colours may be observed while they are drying or passing into decomposition, and these form a criterion by which the value of the fibre may be detected.

The above remarks are applicable to the cleaning of nearly all plants. Some special observations regarding particular classes may be given.

The Palms—Cocoanut Coir.—The coir fibre from the husk of the ripe cocoanut is greatly improved in quality and appearance by beating, washing, and soaking. The old method of steeping in salt water for eighteen months or two years is quite unnecessary, and produces a harsher and dirtier coir. The tannin which this substance contains prevents the fibre from rotting; but most of the coir of commerce is a dusty, harsh produce, while clean, and samples are suited to a superior class of manufactures, as fine mats and furniture brushes. Palm leaves are employed for thatching and making fans; they do not undergo any preparation. Leaf-stalks of the palms are harsh, stiff, and brittle, but if beaten and washed they become softer and whiter; if carefully split and drawn like wire through perforated steel plates, a neat, clean, and durable basket-work might be made from them.

Leaves of the Screw Pine make good matting. Some neat kinds of basket-work have been made from this substance; it has also been tried for paper, and yields it of good quality, light and strong. Experiments are required to separate the green parts of the pulp from the white short fibre.

Rushes, Grasses, and Sedges.—It is uncertain whether differences depend upon the treatment of the grass and the modes of splitting it, or on the different qualities of the plants employed. The Palghat and Cochin mats have long been considered the finest in the south of India.

Liliaceous Plants include the different varieties of aloe, agave, yucca, fourcroya, and sanseviera. They are all hardy, require but little care for their cultivation, are comparatively easily cleaned, and yield good white fibres of considerable length. There are large exports of aloe fibre from the western coast, and the cultivation of these plants might easily be extended in India (see Report in Records of Military Board on Aloe Ropes supplied to the Arsenal from the years 1797 till 1805). The aloe fibre contains a thick, viscid, milky juice, which can only be removed by hard beating or crushing. It is probable that this juice gives the aloe fibre its tendency to rot when much exposed to moisture.

Jute.—Corchorus capsularis, C. olitorius, and Hibiscus cannabinus, are all three indifferently grown and sold as jute. The whole of the recorded evidence of Bengal jute growers, brokers, and merchants may be summed up in the following sentences:—Jute cultivation is easier and more profitable than rice. The Bogi, Corchorus capsularis, is generally preferred to the Desi, Corchorus olitorius, and to the Mesta, Hibiscus cannabinus. The latter is, however, pronounced to be of good gloss and colour, though coarse, but to be exported as true jute. The fibre from

the plants cut just when in flower is fine, glossy, and separates quickly from the bark. It is heavier, coarser, and discoloured, and requires more steeping when they are left standing till the seed is formed. The clearer the water in which the stalks are steeped, the finer the fibre. It is weakened, and the colour spoiled, if immersion is incomplete, or if less than 2½ to 3 feet of water is used; if over-steeping is permitted, or if it is dried in damp, cloudy weather. Under-steeping makes it woody. Stagnant water rots the bark soonest, but at the expense of the fibre; running water does not rot it quickly enough; and slack water in any running stream is best of all. The plants thrive best in good medium loam. Weeding is necessary; if the land is properly manured, it can be cropped with it year after year.

Rheea.—The difficulties met with in cleaning the rheea fibre induced the British Indian Government to offer a reward for a suitable machine; but Lord Mayo's efforts in this direction did not meet with the success that was anticipated, for of the 32 machines tendered in August 1872, only one, by Mr. Greig of Edinburgh, was submitted for trial, and though found to be unequal to the allotted task, the Government awarded a sum of £150 to the inventor as compensation for the trouble and expense he had incurred, and in consideration of some points of excellence in the design. Its costliness, the establishment needed to superintend its working, and the power required to drive it, were prohibitive. The cost of clearing a ton of fibre by Mr. Greig's machine was put down at Rs. 138-2.

Dr. J. Leon Loubeiran, of the Ecole de Pharmacie of Paris, writing in 1873, mentions a machine which, if worked by two horses, could turn out 600 to 900 kilogrammes of fibre in a day; and if worked by hand, in ten working hours could clean 20 to 29 kilogrammes of fibre.

Abelmoschus. Several species of this genus of the Malvaceæ yield fibres. The reticulated fibre of *A. ficulneus* is made into paper, and used in the manufacture of gunny bags.

Abelmoschus esculentus furnishes an excellent fibre for the papermakers, and it is exported to a small extent as a ropemaking material. It has a fine gloss, which it retains even when brown and rotten; a bundle was found by Dr. Roxburgh to bear a weight of from 79 to 95 lbs.

The fibre of the *Abelmoschus moschatus* broke with a weight of 107 lbs.

An excellent white fibre from the *Abelmoschus tetraphyllus* was exhibited by Mr. Jaffrey at the Madras Exhibition of 1857.

Abelmoschus strictus abounds in long, glossy, white, fine, and strong fibres.

The fibres of the *Abroma augustum*, another of the Malvaceæ, are of great beauty, strength, toughness, and fineness; and as it grows all over the East, and as far as the Philippines, and so rapidly as to yield two, three, and even four cuttings annually, all fit for peeling, it is deserving of more than common attention. The bark is steeped in water for a week or more, according to the heat of the weather, and requires no further cleaning. The fibre is said to be three times greater and one-tenth stronger than that of sunn. A cord of the abroma bore a weight of 74 lbs., while that of sunn only 68 lbs. The fibres do not become weakened by exposure to wet, and the plant can be cultivated as an annual.

Abutilon Indicum, another malvaceous plant, yields a rather strong fibre fit for the manufacture of ropes. The plants are gathered and freed of their leaves and twigs, and dried for two days in the sun. They are then tied in bundles, and placed under water for about ten days; the bark and other foreign matter are removed by repeated washing, and the fibres are placed in the sun to dry.

Fibres of a long silky character, fit for making ropes, are obtained from the *Abutilon polyandrum*, and a fibre is also yielded by the *A. tomentosum*. There are several other species.

Agave Americana, or blue and green leaved aloe, grows wild, and yields a long, white, and strong fibre, of which more might be made. It is variously known as Valaiti pat, Kathale, Rakas pattah, and Rakshasi matalu, and is used for ordinary purposes by merely stripping the leaves for immediate use, or soaking them for a time till they are sufficiently soft for maceration. This primitive method rots and stains the fibre, and lessens its value; but by pressing the fresh-cut leaves under strong rollers, and separating and drying the fibre with care and skill, its appearance and strength would be so much improved, that it would command a high price in the London market. The propagation is extremely simple, may be easily extended; and the fibre has been shown to be equal to the best sunn, jute, or Russian hemp, and far superior to the latter for log lines. The expressed juice, when mixed with mortar and applied to walls or floors, is an effectual remedy for white ants, but the smell is abominable.

The leaves of *Alcstris nervosus, Roxb.*, are used for making cordage; they are steeped in water for fifteen days, in order to rot useless parts, and then beaten to separate the fibres.

Aloe Indica, A. littoralis, A. perfoliata, and A. vulgaris, and the American aloe, or Agave Americana, yield fibres of great value. In the year 1882, the Government of India largely recommended their extended culture.

The gomuti palm, *Arenga saccharifera*, of very extensive culture in the Indian islands, furnishes a fibrous matter at the roots of its fronds, much resembling black horse-hair, of finer texture and greater strength than the husk of the cocoanut. This substance, known to Eastern seamen as 'black rope,' is much used for cables and running rigging, and invites greater attention from manufacturers.

From the *Bamboo* is made all the paper of China; the consumption for all purposes of 370 millions of a much-reading and much-printing population—even that imported for engravings into Britain, under the name of India paper—is thus derived.

The paper mulberry, the *Broussonetia papyrifera*, which furnished the ancient clothing of the South Sea Islanders, and from which the Javanese manufacture a cheap paper, of toughness and durability approaching to parchment, is of value.

Bast is the liber or cellular tissue, consisting of tough elongated vessels, which can often be separated and converted into fibrous material, useful for cordage and matting. That best known to Europe is a product of Russia, and obtained from the lime or linden tree, the Tilia Europea, and converted into mats and shoes. A large and interesting class of fibrous substances, which have hitherto attracted but little attention in S.E. Asia, is the barks of trees, many of which yield a strong and ready substitute for rope, and, from the quantity of tannin which some of them contain, they resist moisture, and retain their strength for a long time. With a little care, and the employment of simple machinery, excellent ropes, mats, and baskets might be prepared from some of these substances, and they would probably find a ready sale for agricultural and commercial purposes. The Indian substitutes for bast, while they rank among the easiest grown and most extensively distributed of all its forest trees, usually suffer more from the axe of the woodman and the flames lighted by the cultivator of the jungle, etc., than almost any other class of trees. In places in Southern India where they were once abundant, trees are now rare. In forests under the Western Ghats, far to the southward, they are still to be found in considerable numbers, but in such places the population is too scattered and migratory to take up the manufacture steadily and on an extensive scale. Provided they get a supply for making nets to catch the elk, or fetters for the tame elephant, they generally seek no more. For the latter purpose they frequently use the bark of some of the Sterculia trees.

Bauhinia diphylla, called Authee nar, Yepy, and Apa, has a strong, coarse brown bark, of which the natives make temporary ropes for securing thatch, matting, or fences. The barks of several other Bauhinias are used for the same purposes. Ara nar is the bark of the Bauhinia parvifolia, of which matches for native guns are made. This class also includes the barks of the banian, Ficus Indica, or Ala nar; of the pipal, Ficus religiosa, or Arasa nar; of the Ficus racemosa, Atti nar; of the Ficus oppositifolia, Bodda nar; Ficus, *sp.* (?) Cullethy nar; of the bark of the Ficus tomentosa, also the barks of several species of acacia, as the babul (Acacia Arabica), or Karoovalum nar; the white acacia, or Oday nar (Acacia leucophlæa); Velvaila nar, Wrightia tinctoria; and a number of other plants not yet identified.

The trailing roots, twigs, tendrils, and drops of a number of plants are used for the same purposes.

The basts of the trans-Gangetic countries are very numerous. The Theng-ban-sha, the Pa-tha-yon-sha, the Sha-phyoo, the Ngan-tsoung-sha, Sha-nee, and Ee-gyw-ot-sha, are the better known basts of Arakan; and there the Eee-gyw-ot-sha strips to 5 to 6 feet in length, composed of several layers, of which one side is smooth and compact, and the layers on the other side thin but cancellar, all having a considerable degree of toughness.

The basts of Akyab and Burma are Heng-kyo-sha, Dam-sha, Tha-not-sha, Wa-pree-loo-sha, and Sha-goung, all used in preparing cordage for boats, nets, etc.; wholesale market price, 2 rupees 8 annas per maund, and all are of the inner bark of large trees.

The Sha-nee, Sha-phru, and Theng-ban-sha of Akyab are most plentiful, and are used in preparing cordage for boats, nets, etc., and their wholesale market price is 1 rupee 12 annas per maund.

The Guand-young-sha of Akyab is used for cables and strong nets, the wholesale price being 3 rupees 4 annas per maund; and all these fibres are much used by the inhabitants of that province.

Three basts, extensively used in Burma for making ropes, are called That-poot-net-sha, Sha-laib-way, and Sha-nee. These three basts appear to be the inner barks of various species of Sterculia and allied plants, which abound in the districts. They are strong and enduring in their nature, and some of them have been tested with satisfactory results.

The *Cacha codie*, TAM., are the stems of a creeper used for tying bundles and other purposes instead of twine.

The *Mandrong* rushes of Province Wellesley grow spontaneously in the rice fields after the crop has been gathered, overspreading them like a second crop. Their fibre is strong, and is locally used in the manufacture of rice and sugar bags, mats, etc.; experiment may prove it to be adapted for the manufacture of paper.

The *Mang-kwang* (Pandanus, *sp.*) is used for matting in Province Wellesley.

The *Glam* tree bark is from the Melaleuca viridiflora, Malacca.

The *Talee trap* (Artocarpus, *sp.*) is used at Hassang for fishing-nets.

The *Talee taras* is of Singapore, and there is a bark used as twine in Siam.

The *Bark-cloth* of Keda, in the Malay Peninsula, is manufactured by the Semang, an eastern Negro tribe; and that of the Celebes (Kaili) is made from the bark of the paper mulberry. Mr. Jaffrey, at the Madras Exhibition of 1857, exhibited a very powerful new bast from the Eriodendron anfractuosum.

A bast or nar from the *Acacia robusta*, so common on the Neilgherries, has been used for all purposes to which Russian bast is applied in gardens in Europe. The material is strong, tough, and durable, also pliable when wetted. This bast could be procured cheaply and in large quantities, as when the trees are cut down the roots throw up numerous young shoots to the height of from 6 to 12 feet in one year. The bark of this tree is also a powerful tan.

The beautiful fabric, *China grass-cloth*, is made in the Canton Province, and largely exported to Europe and America. The plant which is supposed to produce this, the Boehmeria nivea, is abundantly grown in the province of Kiang-si. Fabrics of various degrees of fineness are made from this fibre, but none so fine as that made about Canton; it is also spun into thread for sewing purposes, and is found to be very strong and durable. There are two very distinct varieties of this plant common in Che-kiang,—one the cultivated, the other the wild. The cultivated variety has larger leaves than the other; on the upper side they are of a lighter green, and on the under they are much more downy. The stems also are lighter in colour, and the whole plant has a silky feel about it which the wild one wants. The wild variety grows plentifully on sloping banks, on city walls, and other old and ruinous buildings. It is not prized by the natives, who say its fibre is not so fine, and more broken and confused in its structure, than the other kind. The cultivated kind yields three crops a year.

The preparation of the fibre is tedious, and is what causes the difficulty of sending it at a cheaper rate into market. Dr. MacGowan of Ningpo states that in China the last cutting is made in September, and from it the finest cloth is made, the first being inferior, coarse and hard. On being cut, the leaves are carefully taken off on the spot; the stalks taken to the house and soaked in water for an hour. In cold weather the water should be tepid. After this the plant is broken in the middle, by which the fibrous portion is loosened and raised from the stalk. Into the interstice thus made the operator thrusts the finger nails, and separates the fibre from the centre to one extremity and then to the other. The stripping process is very easy. The next process is scraping the hemp, to facilitate which the fibre is first soaked in water. The strips of hemp are drawn over the blade of a small knife or scraper from within outwards, and, being pressed upon by the thumb, the fibrous portion of one surface, and the mucilaginous part of the other, are thus taken off. The hemp is then wiped dry, and the whitest selected for fine cloth. It it afterwards bleached.

The directions for peeling the Chu-ma or Tchou-ma, in China, as translated from the Chinese, are given as follows:—'When the stems are all got in, they are split longitudinally with knives of iron or of bamboo. The bark is first removed, then the lower layer (which is white, and covered with a shrivelled pellicle, which comes off by itself) is scraped off with a knife. The interior fibres are then seen; they are to be removed and softened in boiling water. If the Tchou-ma be peeled in winter, the stems must be previously steeped in tepid water, in order that they may be the more easily split. The first layer of Tchou-ma is coarse and hard, and is only good for making common materials; the second is a little more supple and fine; the third, which is the best, is used for making extremely fine light articles.' Major Hannay writes:—'When the stalks have become brown for about 6 inches above the roots, the top is seized with the left hand, and the leaves are stripped off by passing the right hand to the ground, over which the stalk is cut. The outer bark has first to be scraped off with a blunt-edged knife, when the exposed fibre, still attached to the woody part of the stalk, is placed in the hot sun to dry. On the third morning, after being exposed to the dew for several hours, the fibre is drawn off. This is done by breaking the woody stalk right through towards the thicker end, and then separating the fibre therefrom, drawing it off slowly towards the small end, and repeating the process as often as necessary, though much of the fibre remains, and may be taken off at a second breaking.' (The fibres now require to be carefully washed.—*Henley.*) 'The hanks of fibre are then separately twisted at the upper end, and tied up in bundles. When the threads are required for spinning, they are prepared by drawing the single hanks several times with a blunt-edged slip of bamboo held in the right hand, when they are easily opened out to the required fineness with the fingers and thumb nails. This is certainly a rude and tedious process.'

Fibres of Sida tiliæfolia and Dolichos bulbosus furnish cloth of coarser sorts than China grass.

Callicarpa cana yields the aroosha fibre of Chittagong. Mr. Sconce had some of the fibres of this plant prepared, first by cutting the stems, which grew 3 or 4 feet high, and then steeping. The inner bark was then easily stripped off. This was afterwards heckled, and a portion of the fibre spun into thread, but it does not appear of much value in a country where so many others abound. Captain Thompson reported that a

line made from the fibre, forwarded from Chittagong, broke at once, without stretching, with only 127 lbs., though only the finest and largest of the material was made into this line. A line of Russian hemp of the same size will sustain with ease 400 lbs.; so that this fibre is much too weak for either sailcloth or cordage. It, however, possesses all the free and kindly nature of flax, and even smells like flax. It is easily worked, with little or no waste.—*Royle, Fib. Pl.* p. 310.

Calotropis, a genus of the Asclepiaceæ, has three species, gigantea, herbacea, and procera, which furnish valuable fibres, all of similar character. The plants grow quite wild in all kinds of lone places, and only rare attempts to cultivate them have ever been made. This is the more remarkable, because the people all know the exceeding strength of the cord made from their fibres.

Dr. Wight says of the fibres he tried, that the yercum plant, C. gigantea, yields by far the strongest fibre; it is a most common plant, and may yet become a valuable article of export, if a less costly mode of obtaining it, without injuring its quality, can be found. One variety has cream-coloured, and the other rosy purple flowers, both, however, yielding indifferently the same excellent fibre. It is called popularly the gigantic swallow-wort; Madar, Ak, or Akund, in Hindustani; Yercum or Yeriku in Tamil; and Nella jelledoo in Telugu. Its fibre, which is strong, white, and fine, resembles Belgian flax, and if skilfully prepared, is reported to be well calculated for prime warp yarns, and capable of being spun into the finest thread, and to be worth £100 per ton for such purposes. The following is the result of experiments of the strength of fibres, showing their breaking weights:—

Coir, ...	224 lbs.
Pooley mungee (Hibiscus cannabinus), .	290 ,,
Marool (Sanseviera Zeylanica), . .	316 ,,
Cotton (Gossypium herbaceum), . .	346 ,,
Cutthalay nar (Agave Americana), . .	362 ,,
Janapa (Crotalaria juncea), Sunn, Hindi,	407 ,,
Yercum (Calotropis gigantea), . . .	552 ,,

It finds a habitat, spontaneously, where nothing else will grow, indifferent alike to drought or hungry soil, the seeds being wafted about in their silk cotton envelope, which, by the way, has been spun into fine cloth. The fibre is used locally for string, cordage, tiger traps, ordinary nets, and durable fishing lines, and for all purposes where strength and endurance are required. The plant is used more for medicinal purposes, and for the manurial properties of its leaves when ploughed into paddy lands, than for its excellent fibre. It is a perennial shrub. The seeds in its large green pod are enveloped in a silky white fibre, which has been mixed with silk and cotton in fabrics. The charcoal of its roots is prized in the manufacture of gunpowder. Its leaves, buds, bark, and milky juice are employed in native medicine, for their emetic, diaphoretic, and purgative properties; and the inspissated juice resembles caoutchouc, but is a conductor of electricity. It yields an ardent spirit. It is the Bar spirit of the Western Ghats of India, and, according to Barth, the Giya of the African.

Cotton is largely grown in India, is almost the sole fibrous product fabricated into cloths for ordinary clothing, much of it being exported raw to Europe and America, to be returned in the form of twist and yarn, piece-goods, etc. About half of it is sent to Great Britain, the bulk of the other half going to France, Austria, and Italy.

1874-75, . .	5,600,086 cwt.	Rs. 15,25,73,416
1875-76, . .	5,009,788 ,,	13,27,89,635
1876-77, . .	4,557,915 ,,	11,74,61,836
1877-78, . .	3,459,077 ,,	9,38,35,340
1878-79, . .	2,966,060 ,,	7,91,30,458
1879-80, . .	3,949,701 ,,	11,14,91,778

It is largely grown in the tracts 1500 to 3000 feet above the sea. The E. I. Company made great efforts to improve the staple, and to introduce new varieties, and the produce of Dharwar, Hingunghat, Nagpur, Berar, and Kandesh. Cotton ropes and cotton canvas are largely made from it.

Coir is the commercial name for the fibre of the cocoanut, Cocos nucifera. It is very extensively used throughout the south of Asia. Towards the middle of the 19th century, in Malabar and Ceylon, every available spot within the influence of the sea-breeze was being devoted to the growth of the cocoanut. Along the western coast of the Madras Provinces, the wavy downs near the sea-borders, which had hitherto produced only a stunted and worthless crop of grass, were everywhere levelled, broken up, and manured, so as to form the beds of future plantations.

Crotalaria juncea is a plant of the order Fabaceæ. It is extensively cultivated in many parts of India, and to the east of India, for the sake of its fibres. These form one of the hemps of commerce, sometimes as Madras hemp, also Indian hemp, also sunn hemp; amongst the Tamil people as Wuckoo nar or Janapa nar, in Telugu as Shanamoo. It is cultivated in Rajamundry as a second crop on wet lands with profit to the ryot, and is planted in November and plucked in March. It is of importance in the great agricultural districts to the east of the Godavery, in Malabar, Canara, Darwar, Mysore, in all the great grain countries to the south, and in Kandesh. There is a common belief that a cow in calf, if tied with a rope of sunn, will miscarry. In Gujerat it is often sown for a green manure, being ploughed into the land just after the flower has appeared. Also in the collectorate of Broach, it is somewhat extensively cultivated on those broken lands and edges of ravines, which decline from the level of the Khannun or black soil to the Myhee river. In cleared patches of the different forests which skirt and lie at the foot of the Ghats, it is regularly cultivated as a rotation crop.

The plant is pulled up by the roots, and, after the seeds are beaten out, the stems are immersed in running water for four or five days, and the fibres are then separated by the fingers. They are strong, and made into cordage, ropes, canvas, gunny bags, paper, and into excellent twine for nets. The fibres are much stronger if left in salt water; and if carefully prepared yield foss and hemp of excellent quality, and in its cleanest condition always sells in Britain at £45 to £50 the ton for twine or common purposes. When prepared with the patent liquid, they compare with the best flax, and sell at £80 the ton. In India its price ranges from Rs. 30 to 140 the ton. Another species or variety, C. tenuifolia, the Jubbulpur hemp, yields a strong fibre equal to Russian or Polish hemp.

Flax.—Linum usitatissimum is grown in every part of India, sometimes extensively, but almost exclusively for its seeds. It is often sown as an edging crop to wheat and other grain, because it is not eaten by cattle in the green state. The reason given for its being sown in both long and cross drills, is that the plant, being weakly, requires close sowing to guard it against the action of the weather.

In Vizagapatam it is cultivated chiefly as an oil-seed, which is also the case to some extent in Cuddapah, where, as well as in the Godavery district, it is used for feeding cattle. In Vizagapatam, however, the use of its fibre in the manufacture of fabrics is not unknown, as the collector states that the Gudabah females (a hill tribe) are clothed with a coarse linen of their own making. Beyond Galikondah there are plains 3000 feet above the sea, very similar to the Mysore country, where it could be grown to any extent.

In Bellary, South Arcot, and Tinnevelly, gunnies are manufactured from its fibres.

In Tanjore it is prized for the excellent manure which its leaves and roots supply.

In South Canara its fibres are used for making fishing nets and lines, and probably the same use is made of it in the adjoining district of North Canara.

Flax grown on the Neilgherries was forwarded to England, where it was valued at £28 per ton, or nearly equal to the best Russian flax. But the profit derived from it is only 4 rupees per acre, which is less than that obtained by the cultivation of other products.

The most promising substitutes for flax appear to be the pine-apple, yercum, palay, ootrum, and kooringa. Several of these grow abundantly in Southern India.

The imports of flax into Britain range near to 100,000 tons, valued about £40 the ton, from Russia, Germany, Holland, and Belgium.

Hemp, in India, is a commercial term applied to the fibres of several plants,—to rheea fibre of the Boehmeria nivea, to that of the true hemp, Cannabis sativa, to the fibres of a species of Crotalaria, C. tenuifolia being known as Jubbulpur hemp; Madras hemp is the sunn fibre of

Crotalaria juncea; brown and other hemps are species of Hibiscus; Manilla hemp is from the Musa textilis. In China there are three plants which produce a fibre made into cloth, known under this name, viz. the Cannabis sativa, or hemp, at Canton, the Boehmeria (Urtica) nivea, a species of nettle grown about Suchan, and the Sida tiliæfolia near Tien-tsin-fu (Williams' Middle Kingdom, p. 106). The nettle hemp is cultivated in the provinces north of the Meiling, but the plant also grows in Foh-kien. The grass-cloth made from it is not so much used for common dresses as cotton and silk. This has been noticed under the word Boehmeria.

In cultivating sunn, hemp, or flax, the seeds should be sown thickly together, in order that they may shoot up into long wand-like plants, which will yield much longer fibres, and be much less branched than if sown wide and freely exposed.

Hemp.—The Himalayan districts of Kamaon, Garhwal, and Kote Kangra abound in true hemp of the finest quality, cultivated both on account of its fibre and for the different preparations of bhang. The fibre is sold among themselves for 2 rupees for 82 lbs., or about 5s. a cwt. Hemp sent by D. F. Macleod, Esq., as the produce of Kote Kangra, was highly approved of in England. The culture seems to be very well understood in many parts of the hills, as they carefully prepare and usually manure the ground, thin the plants to within 3 or 5 inches, and cut the male plant, phoolbhanga, which flowers but has no seed, a month or six weeks before the female plant, goolanga or ghoolbhanga, which has seed, the latter being cut about the end of September. Kote Kangra hemp is strong. It is at the same time liked for its colour and texture, and would be certain to be employed for all the purposes for which the best hemp is required, if it could be procured. It is grown throughout Southern Asia, to obtain its intoxicating resin or charras, and its leaves for bhang. In several places the Musalman population are just as great consumers of the intoxicating hemp product as the Hindus. In Sind the extent to which it is used by all classes is frightful. In China, a gigantic species of hemp (Cannabis), growing from 10 to 15 feet in height, is also a staple summer crop. This is chiefly used in making ropes and string of various sizes, such articles being in demand for tracking the boats up rivers and in the canals of the country.

Hibiscus cannabinus, or Dekhani hemp, is grown during the rainy season for local requirements, as much for its edible leaves as for its fibre. It is an annual of from 3 to 3½ months' duration, at the end of which time it is fit to be plucked up for the steeping process, necessary for the extraction of the fibre. It is of good colour, from 7 to 9 feet long, fine to the touch, and with a silky gloss. The best selected fibre would, for rope and cordage, equal in appearance that made from Manilla hemp, so much in request for yachting purposes; the second and third kinds would come in for coarser descriptions of the above manufactures; while the refuse, including cuttings, rejections, and the root-ends, would find a ready market among the papermakers. The fibre is known in Bengal as Mesta pat or Koshta, and Walaiti sunn; is considered equal to sunn hemp; is exported in small quantities, and manufactured into coarse sacking or gunny, and into ropes, twine, and nets; and latterly, in Mysore, into a superior, closely woven matting, which looks and wears well. Generally the crop is grown only as a secondary consideration in drills among the ragi in Mysore, and similarly among the jowari in the Northern Circars, though in and about Rajamundry it is said to be in some instances cultivated as a special crop by itself.

The plants are ordinarily cut after the formation of the seed, and left to dry in the sun for a day or two, when they are steeped in stagnant water, till the bark is sufficiently rotted to allow of the easy extraction of the fibre, which is sun-dried for use or export. The ordinary process is to beat the softened bark on a stone, by which unequal pounding much of it adheres to the fibre, which is further discoloured by careless sun-drying. Long steeping in stagnant water is another blot in its preparation. It should be cut just as it is in flower, and left in swathes or bundles for from twenty-four to thirty-six hours to dry partially in the sun, when they should be steeped in running water just sufficiently long to admit of the ready separation of the fibre, which should be thoroughly washed and dried under shade, as exposure to the sun's rays causes it to deteriorate in colour, touch, and strength, and London brokers judge much by sight and touch. The time that the bundles should remain immersed has to be regulated by those skilled in the matter, with great judgment and frequent inspections, for if the process of fermentation is carried even a little too far, the fibre is spoiled.

Under the name of Poondi, it is cultivated extensively at Nuddea, Hoogly, Farridpur, Bakarganj, and elsewhere, as a variety of jute, and is called bastard jute, but is as fit for papermaking as true jute. It is sold as and along with jute, and is employed in Bengal for all the purposes of jute. Paper is largely made from it at Dacca, Mymensing, Dinajpur, and Noakhally, where it is prepared by being boiled with lime.

Hibiscus sabdariffa yields a similar fibre, also called mestapat or pulachi. The Roselle is grown at Puri and Bhagulpur, and the Bendikai largely at Hoogly, and 24 Parganas, Nuddea, Murshidabad, Kooch-Bahar, and Puri, and less so in many other districts, the fibre being exported as jute. In Travancore the Hibiscus tiliaceus is cultivated, but it is not an annual, and therefore yields a less remunerative crop. The Hibiscus plants will continue to be chiefly confined to the agricultural population of its native places. H. furcatus of the Ghats and Bengal yields abundance of strong white flaxy fibres, but, being very prickly, is unfit for handling.

The *Juncaceæ* or rush tribe, Juncus Indicus and others, are employed for making the bottoms of chairs and mats. J. effusus of Japan is cultivated to be made into floor mats. In China a species of Juncus is a great crop. Its stems are woven into beautiful mats, used by the natives for sleeping upon, for covering the floors of rooms, and for many other useful purposes. This is cultivated in water, somewhat like the rice-plant, and is therefore always planted in the lowest parts of the valleys; the harvest of this crop is in the beginning of July, and hundreds of the natives are then employed in drying it. The river's banks, uncultivated land, the dry gravelly bed of the river, and every other available spot, is taken up with this operation. At grey dawn of morning the sheaves or bundles are taken out of temporary sheds, erected for the purpose of keeping off the rain and dew, and shaken thinly over the surface of the ground. In the afternoon, before the sun has sunk very low in the horizon, it is gathered up again into sheaves, and placed under cover for the night. And so the process of winnowing goes on day by day until the whole of the moisture is dried out of the reeds. They are then bound up firmly in round bundles, and either sold in the markets of the country, or taken to Ningpo and other towns where the manufacture of mats is carried on, on a large scale.

The true *Jute* of Indian commerce is the fibres of Corchorus capsularis and C. olitorius. It has been an export from India to Great Britain since the year 1833, but is now exported to the extent of about 300,000 tons, value up to nearly four millions sterling. Between 1874-75 and 1879-80, the value of all the exports of raw jute, gunny bags, gunny cloths, rope and twine, was—

1874-75,	Rs. 3,48,55,221	1877-78,	Rs. 4,28,92,407
1875-76,	3,29,45,209	1878-79,	4,89,88,604
1876-77,	3,35,61,242	1879-80,	5,56,53,944

The sowing is in April and May, and in July and August the plants are from 3 to 12 feet high, are cut down, made into bundles, which are placed in shallow water. When the bark separates, and the stalk and fibres become softened, they are taken up and untied; they are then broken off two feet from the bottom, the bark is held in both hands, and the stalk removed. The fibres are then dried in the sun, and are cleaned for the market. They are soft and silky, and much care is needed during the steeping to prevent undue decomposition. All the sacking of India is made from it, and it is largely exported from Bengal to the Dutch and Spanish possessions in Asia, to America and to Australia. The raw fibre of the jute, with a little wool, has been manufactured into good, useful, and substantial carpeting, which can be sold at the very moderate price of 8½d. a yard. At an industrial exhibition held at Dundee, there was at one end of a case the harsh, woody-looking jute stalks, and through each stage, of fibre to yarn and fine

thread; in a second case were arranged coarse and fine gunny bags, packing cloths, coarse and fine towelling, different descriptions of plain and coloured paddings, pocketings and linings, crumb and other cloths, ladies' chignons, and brilliant-looking rugs and carpets, that for design and colour were said not to compare unfavourably with those made from wool. The American imports of Goni (gunny) sacking and the raw material have decreased since they have practically ascertained their ability to raise the plant in the southern districts, which, under their more careful culture, will of course improve. In China the staple summer crops are those which yield textile fibres. Jute is grown in China to a very large extent, and is used in the manufacture of sacks and bags for holding rice and other grains. It is stated that the celebrated China hemp, called Lookina or green hemp, which, according to Messrs. Jardine Skinner & Co., is grown in the Hankow districts for conversion into grass-cloth, is nothing but jute, of which plant they say the description and particulars exactly compare with the Chinese hemp, and that, in addition to its culture, the Chinese import it.

The *Musa* genus of plants, the plantain or banana tribe, is well known from two of its species, M. paradisiaca and M. textilis. Of all the substitutes for hemp, probably the most important is that obtainable from the banana or musa; the stem of all of the species produces a fibre of some utility. Very little attention has ever been paid to the cleaning of its fibres, though the most conspicuous amongst the Indian fibrous plants. It is everywhere cultivated in the plains of India for its fruit. It bears fruit only once, and is then cut down and left to rot upon the ground. There will be no difficulty in obtaining from this plant alone a quantity of fibre of admitted valuable quality, applicable to the manufacture of every species of cloth or other article usually made from flax or hemp, and of equal quality, and it can be used with no less facility and advantage in the manufacture of paper. It yields an excellent substitute for hemp or linen thread. On cutting down the stem, remove old, stained, or withered leaves, and strip off the different layers. Lay a leaf-stalk on a long flat board with the inner side uppermost, scrape off the pulp with a blunt piece of hoop iron or old spoon; turn it, and treat the outer side similarly. When a bundle is obtained of these partially cleaned fibres, wash it briskly in a large quantity of water, rubbing and shaking it to get rid quickly of all the sap and pulp; spread them out in thin layers or hang them in the wind to dry, but exposure to the sun's says imparts a brownish-yellow tinge.

Musa textilis is the well-known abaca of the Philippine Islands. The fruit is harsh, small, and uneatable when allowed to ripen, but in practice the ripening is prevented, for the flower is nipped off, and that increases the strength of the fibre. It has been immemorially cultivated, and contributes largely to the clothing of the four millions of inhabitants of the Philippines, besides being largely exported in the raw state. It is made into cordage in the country, and cloth of a very fine quality and of great durability. In Great Britain it is only known in the raw state, under the name of Manilla hemp; and Great Britain in 1877, 1878, and 1879 was receiving about 18,000 tons, value £490,000, or £27 a ton. The cost of this article at the port of Manilla is about £14 a ton; it is the coarsest fibres only that are exported, all the finer being retained for cloth, which as yet has not been made except in the Philippines. The fine grass-cloth, ships' cordage and ropes used in the South Sea whale fisheries, are made from this substance. The outer stalks of the stem leaves yield the thickest and strongest fibres. Musa textilis is propagated by transplanting the suckers that spring up about the roots of the old plants. The abaca is generally planted in the cacao gardens, to shelter the shrubs from the heat of the sun; and it seems to be only in Albay, Leyte, and on the north coast of Mindanao that it is cultivated expressly as an article of commerce, the production of sugar absorbing the attention of planters in districts more adjacent to the capital. The filaments are detached from the stem by a very simple process, which closely resembles the mode of preparing hemp in Europe. The Musa textilis is said to grow on the Ghats from Cape Comorin northward; but on the northern slopes of the Ghats the plant does not reach a height fitted to afford a fibre of more than two feet in length. Its strength is well known to the Ghat people, who employ it occasionally for domestic purposes in ropemaking, as well as use the stem for food. This may possibly be the Musa superba of the Dindigul valleys, at high elevations on the Travancore mountains, and wild on the Neilgherries at 7000 feet. It evidently requires a rich volcanic soil; it would probably succeed in the Moluccas and in the islands east of Java.

Nelumbium speciosum, the lotus, yields a useful fibre from its stalk.

In the Red Sea, cables are used formed of the coating of the branches of the date tree, *Phœnix dactylifera*. At Oopada, the same material is used mixed with a proportion of fibre of the kaldera bush, the Pandanus odoratissimus. The leaf-stalks are made into baskets. The leaves of the *wild date tree*, Phœnix sylvestris, and of the P. farinifera are made into mats, and the leaf-stalk into ropes, for draw-ropes for wells.

The *Neilgherry nettle*, Urtica heterophylla, is a very ferocious-looking plant, the least touch producing a most acute though quickly subsiding pain. Its bark abounds in a fine white, glossy, silk-like, strong fibre. The Todawar race separate this flax by boiling the plant, and spin it into their coarse thread. If well prepared and procurable in quantity, it is fitted to compete with flax for the manufacture of even very fine textile fabrics. Mr. M'Iver alludes to the superior quality of the fibre of the Neilgherry nettle, as commanding the high price of £45 to £50 per ton in the rough state, and well worth the encouragement of Government for its cultivation.

The leaves of the abundant *pine-apple plant*, Ananassa sativa, are largely used in the Malay Peninsula and in the islands of the Archipelago, to furnish different sorts of pine-apple fibre, from the coarse material used for cordage to the finest thread for weaving cloth. Fibre of the pine-apple is the Pina of the inhabitants of the Philippines, who manufacture from it their finest fabrics. The Chinese in the European settlements of the Indian Archipelago prepare the fibre in considerable quantity, exporting it to China, where it is in great esteem for thread, and for weaving fine textures. The process of extracting and bleaching the fibres is exceedingly simple, and the first step is to remove the fleshy or succulent side of the leaf. A Chinese, astride on a narrow stool, extends on it, in front of him, a pine-apple leaf, one end of which is kept firm, being placed beneath a small bundle of cloth, on which he sits. He then with a kind of two-handled plane made of bamboo removes the succulent matter. Another man receives the leaves as they are planed, and with his thumb nail loosens and gathers the fibres about the middle of the leaf, which enables him by one effort to detach the whole of them from the outer skin. The fibres are next steeped in water for some time, after which they are washed in order to free them from the matter that still adheres and binds them together. They are now laid out to dry and bleach on rude frames of split bamboo. The process of steeping, washing, and exposing to the sun is repeated for some days, until the fibres are considered to be properly bleached. Without further preparation, they are sent into town for exportation to China.

Sanseviera Zeylanica, the bowstring hemp, is a plant of the Peninsula of India and of Bengal. The leaves are three or four feet long. They are steeped in water for several days, to decompose the pulpy part, but they are apt to become discoloured by this process. A better plan is to beat the leaf and place it on a board, and remove the pulp by scraping with a rough stick or iron till all the pulp be removed. 100 lbs. of the leaves yield 27 lbs. of clean fibre. Royle wrote that the fibre, though as fine and soft as human hair, possessed extraordinary strength and tenacity, and when prepared in hanks bore so strict a resemblance to raw silk, that the difference could not be easily distinguished when the two were exhibited side by side. It is known by the name of bowstring hemp, Marool, Moorva, and Chaga or Saga, in the different dialects, and is used for ropes, twine, thread, bowstrings, and in Trichinopoly for paper, and it has been spun into cloth of the finest quality. It is grown to some small extent in parts of the Peninsula, and more largely at Noakhally, Shahabad, Hazaribagh, and Singbhum.

FICUS, a genus of plants belonging to the natural order Urticaceæ. The number of species is great, and they are all either tropical or inhabitants of warm countries. Some are small plants, others are among the largest trees of the forest; others of them yield a useful caoutchouc; several of them yield fibrous materials used for cordage, for half stuff and papermaking; and the banyan tree and the pipal tree, F. Indica and F. religiosa, are highly ornamental plants. Several throw out aerial roots from their branches, which grow into the ground, and again throw out branches. F. carica, the fig tree, is cultivated in many parts of India. F. Benjaminoides, the Tenasserim banyan tree, drops aerial roots like the Indian fig tree, grows amidst mangroves and near tidal streams. The root of F. excelsa, *Vahl.*, of Peninsular India and the Moluccas is given in decoction as a purgative. A soft grey timber is obtained from the F. gooleeria, *Roxb.*, which grows in Hindustan and Chutia Nagpur. F. heterophylla, *Roxb.*, Wal-ahatoo, SINGH., is common in Ceylon in damp shady places. F. infectoria, *Willde.*, is of Ceylon and India, and its bark is chewed with betel in lieu of the areca nut. F. laccifera, *Roxb.*, Nooga-gass, SINGH., is not uncommon in the central province of Ceylon. F. lanceolata, *Roxb.* Thapan, BURM., of Pegu, yields a soft, useless wood. F. lucida, *Ait.*, the Kapootoo-bo-gass of Ceylon, occurs in the drier parts of that island. F. nitida, *Thunb.*, which grows in the south of China and in many parts of India, is a valuable ornamental tree and good for shade. Some of the species possess in their milky secretion a highly acrid principle, which explains the specific name of F. toxicaria of Sumatra, and F. dæmona of Tanjore. One species, Kulli kae, CAN., generally a climber, abounds in Canara and Sunda, in the country from Bilgy to the Ghats; its juice peculiarly abundant and viscid, and used as a bird-lime; well merits a further examination. Another species, Thnb-boo, BURM., a Tavoy tree, is used in house carpentry. A further species, the Bace dhimeree of Ganjam and Gumsur, extreme height 30 feet, is burnt for firewood, being tolerably common; the leaves are used for food platters; the fruit is eaten.—*Wight; Gibson; Captain Macdonald; Thwaites*; *Voigt.*

FICUS ASPERRIMA. *Roxb.*

F. ampelos, *Burm.* | F. politoria, *Moon.*
Seo-wana maddeya, SINGH. | Karasa, Tella baranki, TE.
Pindi chettu, . . . TEL.

A large tree, a native of the Peninsula of India and of Ceylon up to 2000 feet elevation. The trunk is remarkably short, but very thick, and sometimes so completely covered with small very leafy branchlets as to be entirely hidden. The leaves are used to polish ivory, horn, etc., and in Ceylon are in general use amongst native cabinet-makers as a substitute for fine sand-paper, similarly to those of the Trophis aspera.—*Roxb.; Thw.*

FICUS CARICA. *Linn.*

Doomoor, ... BENG. | Anjir, ... HIND.
Fagu, Phagwara, CHENAB. | Jamir, ... RAVI.
Wu-hwa-kwo, . . CHIN.

The fig tree is cultivated in many parts of the East Indies, as high as 5000 feet on the Ravi. It reaches 7 feet in girth occasionally. It is common about Kandahar, mostly wild? The white fruit is generally kept for home use, and the black exported. Twenty maunds of the fruit are annually imported from Afghanistan *via* Peshawur. Grows plentifully in China. Two main varieties are recognised, viz. that which produces two crops a year, and that which yields one crop. The former includes the grey or purple fig, which is the best, also the white fig and the golden fig, the latter being the finest in appearance but not in quality. The main variety, which bears only one crop a year, supplies the greatest quantity of figs for drying. The ordinary drying is effected in the sun. With the two-crop variety, the first crop grows on wood of the preceding year, the second crop is on wood of the current year.—*St.*

FICUS CINERASCENS. *Thw.* Wal-gona-gass, SINGH. A large tree of the warmer parts of Ceylon.—*Thw.* p. 266.

FICUS CITRIFOLIA. *Lam.*

F. Mysorensis, *Roth.* | Urostigma Mysor., *Mig.*
Katu alu, . . . MALEAL. | Boonooga-gass, . . SINGH.

Grows in Ceylon and on the western side of India Parts are employed in medicine.

FICUS CORDIFOLIA. *Willde.*

Urostigma Mysorense, *Mig.*

Badha, Pilkhan, . BEAS. | Ny-oung-gyat, . . BURM.
Nga thin-gyee, . . BURM. | Kumbal, Pulaleh, RAVI.

A tree of Moulmein and the Tenasserim Provinces, and of the Panjab Siwalik tract up to the Ravi. In Tenasserim this tree usually supplies the place of the pipal in the public places, and in the neighbourhood of religious edifices. It approaches nearest to F. religiosa, yet is easily distinguished from it by the leaves being narrower in proportion to the length, with much shorter points, and the fruit being perfectly round, and not, as in religiosa, vertically compressed. Fruit edible. It yields a strong wood, fit for any ordinary purpose.—*Mason, Cal. Cat.; Stewart; Gamble.*

FICUS CUNIA. *Buch.* F. conglomerata, *Roxb.*

Kath gular, . . CHENAB. | Karndol, ... RAVI.
Trumbal, . . . ,, | Kuri, ... SUTLEJ.

A tree of the Konkans, Rajmahal, Oudh, Nepal, Taong Dong, and Moulmein, occasional in the Panjab Siwalik tract up to the Chenab. The fruit is not eatable, but in parts of India is used in medicine, and in the Peninsula the rough harsh leaves are said to be employed for polishing wood-work.—*Dr. J. Stewart, P. Plants*, p. 212.

FICUS DÆMONUM. *Kon.* Yæ-kha-oung, BURM. A tree of Tanjore and Burma.

FICUS DISTICHA. *Blume.* Common in the central province of Ceylon at 3000 to 5000 feet. —*Thw.* p. 266.

FICUS ELASTICA. *Roxb.*

Kusnir, ... BENG. | Indian rubber tree, . ENG.
Elastic fig tree, . ENG. | Kasnir, ... SYLHET.
Caoutchouc tree, . ,,

The Indian caoutchouc tree inhabits Assam, Khassya, British Burma, the Pundua and the Juntipur mountains, which bound the province of Sylhet on the north, where it grows to the size of a European sycamore. It is chiefly found in the chasms of rocks and over the declivities of mountains, among decomposed rocky and vegetable matter. It produces when wounded a great abundance of milk, which yields about one-third of its weight of caoutchouc. It grows with great rapidity. A tree is described as being 25 feet high, with the trunk a foot in diameter, when only four years old. Another to 112 feet, with 100 aerial roots, in 32 years. Its juice is used by

the natives of Sylhet to smear the inside of split rattan baskets, which are thus rendered water-tight. Old trees yield a richer juice than young ones. The milk is extracted by incisions made across the bark, down to the wood, at a distance of about a foot from each other, all round the trunk or branch, up to the top of the tree, and the higher the more abundant is the fluid said to be. After one operation the tree requires a fortnight's rest, when it may be again repeated. When the juice is exposed to the air, it separates spontaneously into a firm elastic substance, and a fetid whey-like coloured liquid. Fifty ounces of pure milky juice taken from trees in August yielded exactly 15½ ounces of clean washed caoutchouc of the finest quality, perfectly soluble in the essential oil of cajaput. This tree abounds in Assam, but the Outer Himalaya at Punkabari is its western limit. It penetrates amongst the mountains as far as the Tista valley in Sikkim, but is of small size. It may be distinguished from a distance of several miles by its immense and dense lofty crown. Dr. Griffiths gives the dimensions of one of the largest as follows:—Circumference of main trunk, 74 feet; ditto of main trunk and supports, 120 feet; ditto of area covered by the branches, 610 feet; estimated height, 100 feet. The geographical range of the tree, so far as has been hitherto ascertained, may be stated to be between lat. 25° 10′ and 27° 20′ N., and long. 90° 40′ and 95° 30′ E. Throughout this space it is found in the densely wooded tracts so prevalent along the bases of the hills, and perhaps on their faces, up to an average elevation of 2250 feet. Since 1873 it has been largely cultivated in Assam and Burma.—*F. von Mueller; The Universal Review; Roxb.; Hooker, Him. Jour.*

FICUS EXCELSA. *Vahl.* Ati meralu, MALEAL. Grows in the Moluccas and in Southern India. Its root is given as a purgative, in decoction.—*Voigt.*

FICUS GLOMERATA. *Roxb.*

Jujuya doomoor, . BENG.	Perena teregram, . MAL.
Yæ-tha-pan, . . BURM.	Rumbal, Palah, . PANJ.
Kulla kith mara, . CAN.	Atteekka-gass, . . SINGH.
Oombur, ... DUKH.	Atti maram, . . TAM.
Glomerous fig tree, ENG.	Medi chettu, Atti ch., TEL.
Gooler, ... HIND.	Bodda chettu, Paidi ch., ,,

A large tree; thrives best near a watercourse or on the banks of rivers; fruit like the common fig, and grows in clusters along the branches; flavour insipid, but eaten by the poor. In Ceylon it is common on the banks of rivers up to an elevation of 2000 feet; grows also in the Peninsula of India, the Konkans, Nepal, all over Oudh, at Taong Dong, and Moulmein. Some of the lac of commerce is gathered from this tree. Wood is considered sacred, and is burnt when libations are offered. In the Panjab it is said to be only useful for fuel. A medicinal extract is obtained from the root.—*Cal. Cat.; Thw.; Stewart; Powell.*

FICUS GOOLEREEA. *Roxb.* Dumbar, HIND.? A small tree of Chutia Nagpur and Hindustan, with a soft, grey timber.—*Roxb.; Cal. Cat.; Voigt.*

FICUS INDICA. *Linn.* Banyan tree.

F. Bengalensis, *Linn.*	Urostigma Bengal., *Mig.*
But, Bat, Bar, . . BENG.	Maha nooga-gass, . SINGH.
Pa-nyoung, . . . BURM.	Kiripelle, . . . ,,
Ahlada mara, . . CAN.	Ala maram, . . TAM.
Arbor de rais, . . PORT.	Marri chettu, . . TEL.
Vata vriksha, . . SANSK.	

The Indian fig tree grows in most parts of India and Ceylon. Its fruit, the figs, grow in pairs, and when ripe are about the size and colour of a middle-sized red cherry. If the seeds drop into the axils of the leaves of the palmyra tree, the roots grow downwards, embracing the palmyra trunk in their descent. By degrees they envelope every part except the top, whence, in very old trees, the leaves and head of the palmyra are seen emerging from the trunk of the banyan tree, as if they grew from it. Hindus regard such unions with reverence, and call them a holy marriage instituted by Providence. Some of the banyan trees cover an immense space even when comparatively young. In the Botanical Gardens at Calcutta, when Dr. Falconer ascertained the age of the great banyan tree, which is still the pride and ornament of the garden, people were alive who remembered well its site being occupied in 1782 by a date palm, out of whose crown the banyan sprouted, and beneath which a devotee sat. The editor, in 1834, paced at noon the outer shadow of its branches, and the circumference was near 360 paces. Dr. Hooker, writing after that, mentions that this tree was 80 feet high, and threw an area 300 feet in diameter into a dark, cool shade. The editor paced it again, at noon, in 1863, and the circumference was still 100 paces. Large banyans are common in India, but few are so symmetrical in shape and height as that in the Calcutta Gardens. Dr. Roxburgh had seen such trees full 500 yards round the circumference of the branches, and 100 feet high, the principal trunk being more than 25 feet to the branches, and 8 or 9 feet diameter. Marsden mentions a remarkable banyan tree near Manjee, 20 miles west of Patna in Bengal, diameter 360 to 375 feet, circumference of shadow at noon 1116 feet, circumference of the several stems, in number fifty or sixty, 921 feet. Under this tree sat a naked devotee, who had occupied that situation for 25 years; but he did not continue there the whole year through, for his vow obliged him to lie, during the four cold months, up to his neck in the waters of the river Ganges. One of them has long been famed at Allahabad, and which is still represented by a withered stem in the underground cave at Patala puri. There was no doubt a very ancient and venerable fig tree at Allahabad, perhaps for some centuries, for it is alluded to in various vocabularies, as Midini, etc.; it is also described in the Kasi-khanda and Kurma Purana. The first notice, however, is in the Ramayana (b. 11, sec. 41 and 42), of Rama with his wife and brother resting under the shade of it after crossing the Jumna, so that not only was the tree then in the open air, but it was on the opposite side of the river to that on which it is now traditionally venerated.

A remarkably large banyan tree grew on an island in the river Nerbadda, ten miles from the city of Broach, in the province of Gujerat, and was described by Colonel Sykes. It was called the Kabir Bar, a name said to have been given to it in honour of a saint, but possibly from the Arabic adjective kabir, great. It was supposed to be that which Nearchus described. Forbes in his Oriental Memoirs mentions its circumference as of 2000 feet; and its overhanging branches, which had not thrown down aerial roots, stretched over a much larger area. The tree had as many as 320 large trunks and over 3000 smaller ones, and was capable of giving shelter to 7000 men.

High floods, one particularly in 1820, have since carried away the banks of the island on which it grew, and with it a portion of the tree. Indian armies, when in that neighbourhood, have encamped around it; and at stated seasons Hindu festivals are held there, to which thousands of votaries repair. The banyan tree is alluded to in Paradise Lost as that when Adam and Eve

'Both together went
Into the thickest wood: when soon they choose
The fig-tree; not that kind for fruit renowned,
But such as, at this day, to Indians known
In Malabar and Dekhan, spreads her arms,
Branching so broad and long, that in the ground
The bended twigs take root, and daughters grow
About the mother tree, a pillared shade,
High overarched and echoing walls between.
There, oft, the Indian herdsman, shunning heat,
Shelters in cool, and tends his pasturing herds
At loopholes cut through thickest shade: these leaves
They gathered, broad as Amazonian targe,
And, with what skill they had, together sewed,
To gird their waist.'

The banyan tree, however, is not, as Milton sang, remarkable for the broadness of its leaf, though the branches spread to a great extent, dropping their roots here and there, which, so soon as they reach the ground, rapidly increase in size till they become as large as, and similar to, the parent trunk. As the banyan tree gets old, it breaks up into separate masses, the original trunk decaying, and the props becoming separate trunks of the different portions. The banyan hardly ever vegetates on the ground; but its figs are eaten by birds, and the seeds deposited in the crowns of palms, where they grow, sending down roots that embrace and eventually kill the palm, which decays away; the drops or aerial roots yield a heavy hard timber, and, when well prepared by water seasoning, oiling, etc., are valued for tent poles, spars of small vessels, etc. The wood of the trunk is not employed in India, but Mr. Rohde had used planks, sawn from large drops, after they had been seasoned in water, with advantage; for knife-boards it is excellent. In Ceylon, Mr. Mendis says, it is used for common furniture and house buildings. A white glutinous juice is extracted by incision, from which birdlime is prepared; and it is applied to the mouth to relieve toothache. It is also considered a valuable application to the soles of the feet when cracked and inflamed. The bark is supposed by the Hindus to be a powerful tonic. The leaves are pinned together to form platters, off which Brahmans and Hindus eat. Much lac is often to be collected from this tree.—*Uttara Rama Cheritra*, note, p. 302; *Hooker's Him. Journ.; Marsden; Thw.; Mr. Rhode; Heber, Journ.* i. p. 68.

FICUS LACCIFERA. *Roxb.*

Urostigma laccifera, *Miq.* | Nooga gass, . . . SINGH.

A tree of Ceylon and of Burma; it yields caoutchouc.—*Roxb.* p. iii. 545.

FICUS NITIDA. *Thunb.*

Ficus Benjaminca, *Roxb.*	Urostigma retusum, *Miq.*
F. pallida, *Wall.*	U. nitidum, ,,
F. retusa, *Linn.*	U. pisiferum, ,,
Chinese banyan, . ENG.	Billa juvvi, Erra juvvi, TEL.
Iti alu, . . . MALEAL.	Emmodugu, ... ,,
Emmenta, Hemanto, TEL.	Nandireka, ... ,,

Common in the central province of Ceylon up to an elevation of 5000 feet; grows in the Peninsula of India, in Lower Nepal, the Khassya Hills, Penang, and China; the bark of the root and leaves are used in medicine. It is a great favourite with the priests of China, being valuable for ornamental purposes and shade.—*Thw.; Fortune, Tea Dist.* p. 6; *Wanderings*, p. 381; *W. Ic.*

FICUS OPPOSITIFOLIA. *Roxb.*

Degar, ... BEAS.	Dhura of . . KANGRA.
Kaku doomoor, . BENG.	Daduri, Rumbal, . RAVI.

A small tree of all India. Its seeds are sown by birds, causing much destruction to houses and walls.—*Roxb.* iii. 561.

FICUS RELIGIOSA. *Linn.* Pipal tree.

Urostigma religiosum, *Gasp.*

Medah, Vudah, . ARAB.	Bo-gass, . . . SINGH.
Ashwuth, . . . BENG.	Arasa maram, . . TAM.
Ranghitmara, . . CAN.	Raya manu, . . . TEL.
Ani-pipal, . . DUKH.	Re, Ravi, Ragi, . . ,,
Pipal, ... HIND.	Aswaththamu, . . . ,,
Ari-alu, . . . MALEAL.	Kallaravia, ... ,,

This large, handsome tree grows in most of the countries of the S.E. of Asia. It is frequently to be met with near pagodas, houses, and other buildings. One at Gyaine, South Behar, is said to have been that beneath which Sakya was reposing when his views as to his duties became clear to him, and if so, is more than 2400 years old. It is also held in veneration by the Hindus, because the god Vishnu is fabled to have been born under its branches. In the Somavati festival, the Mahratta women circumambulate a pipal tree, and place offerings on it, when the new moon falls on a Monday. The pipal tree is preferable for avenues to the banyan. The leaves are heart-shaped, long, pointed, wavy at the edge, not unlike those of some poplars; and as the footstalks are long and slender, the leaves vibrate in the air like those of the aspen tree (Populus trimula). Silk-worms prefer the leaves next to those of the mulberry. The roots are destructive to buildings, for if once they establish themselves amongst the crevices, there is no getting rid of them. Pipal bark is deemed a good tonic; the lac insects also flourish on this tree. The Chinese remove the cellular tissue or green matter of the leaves, and, covering the skeleton with a coat of varnish or gelatine, paint figures of birds, flowers, etc., on its surface. It is the most sacred of trees with the Buddhists, who say it was under this tree that Gautama slept, and dreamed that his bed was the vast earth, and the Himalaya mountains his pillow, while his left arm reached to the Eastern Ocean, his right to the Western Ocean, and his feet to the great South Sea. This dream he interpreted to mean that he would soon become a Buddha. A branch of the tree was sent to Ceylon by Asoka, and it flourishes there as the Bo Tree.—*Malcom's Trs.; Mason; O'Sh.; Riddell.*

FICUS ROXBURGHII. *Wall.* F. macrophylla, *R.*

Timbul, ... PANJ. | Trummel, Tirmul, PANJ.

This small tree is found in the Sutlej valley, between Rampur and Sungnam, at an elevation of 5000 feet; also grows in Australia. Fruit edible, flavour pleasant; sold in bazar of Simla.—*Cleghorn, P. Rep.; Backhouse, Visit, etc.; Stewart.*

FICUS RUBESCENS. *Vahl.*

F. heterophylla, *Lam.*	F. aquatica, *Koen.*
Guri shiora, . . BENG.	Buroni chettu, . . TEL.
Valli teregam, MALEAL.	

Grows on the coasts of Peninsular India, and the root bark is used in medicine.

FICUS STIPULATA. *Moon.* F. diversiformis, *Mig.*

Man-tu-lo, . . . CHIN.	Ngai-yuh, . . FORMOSAN.
Muh-man-tu, . . . ,,	

Very common in Ceylon up to 2000 feet. Its dry, tasteless fruits are used in China for fomenting hæmorrhoids. F. pumila has the same Chinese name.—*Thw.; Smith.*

FICUS T'SIELA. *Roxb.*

Eichie wood, . . . ENG.	Ichi maram, ? . . . TAM.
Datira, ... MAHR.	Juvvi, Pedda-jovi, . TEL.
T'siela, . . . MALEAL.	

A large and very handsome tree, generally planted by the roadsides for the sake of its shade, and from its not sending down aerial roots.

FICUS VENOSA. *Ait.*

Ficus infectoria, *Willde.*	Urost. ægeirophyllum, *Mig.*
Urostigma t'jakela, *Mig.*	Urost. Ceylonense, *Mig.*
Urost. infectorium, *Mig.*	
Bassari mara, . . . CAN.	Kall alim, ? . . . TAM.
Kirri palla gass, . SINGH.	Juvvi, ... TEL.

Grows in Ceylon, the Peninsula of India, and the Panjab. Its bark is used as a substitute for betel-nut, to chew with the betel leaf; its leaves are given as fodder to elephants. The root is used as a red dye.

FICUS VIRGATA. *Roxb.* F. Caricoides, *Roxb.*

Dhudi, ... BEAS.	Kirmri, . . KASHMIR.
Phagoru, Phog, . CHENAB.	Jamir, ... RAVI.
Thapur Fagu, . ,,	Khabare, . SALT RANGE.
Faguri bari, . . . DOAB.	Kak, Kok, Phedu, SUTLEJ.
Kuwari, Puwari, . HIND.	Inzar, . . . TR.-INDUS.
Phag, Phawari, . JHELUM.	

This grows in Hindustan and Bengal. It is wild occasionally in waste places in the plains, Cis and Trans Indus, and is not uncommon in the Himalaya to 6000 feet. It not unfrequently reaches five or six feet, and Dr. Stewart noted one of more than ten in girth. The fruit is eaten by the natives, and at 5000 feet in the hills he found it excellent, though it is generally poor. Wood used for fuel and agricultural purposes.—*Stewart.*

FIDA. ARAB., PERS., HIND. A sacrifice. Fidai, a martyr, one who sacrifices himself; a secret conspirator. See Kurban; Fidvi.

FIERASFER. A species of this genus of crabs, about six inches long, dwells, as a parasite, within the great sea-cucumber. There are several species. The one which lives in the body of the holothuria, in its digestive tube, has a long compressed body, entirely covered with small scales; they are found in the same, along with Palæmons and Pinnetheres. It eats a portion of all that enters. Hartwig says it enters the mouth, tears the sides, and quarters itself between the stomach and the outer skin.

FIGS.

Tin, Teen, . . . ARAB.	Figos, ... PORT.
Vygen, ... DUT.	Udumbara, . . SANSK.
Figues, ... FR.	Rata attika, . . SINGH.
Feigen, ... GER.	Higos, ... SP.
Anjir, . . HIND., PERS.	Simai-atti pallam, . TAM.
Fichi, ... IT.	Me'di-pandu, . . . TEL.
Fici, Caricæ, . . . LAT.	Injir, ... TURK.

The Ficus carica grows all over Spain, the Mediterranean, Italy, France, Greece, and India, and its fruit, the figs, can be had in every part of India. In Afghanistan there are two kinds, one a black fruit, which are dried and strung together and exported; the other, called Sada, are locally consumed. See Ficus carica.

FIJI, a group of islands belonging to Great Britain in the South Seas, about 1800 miles from Sydney. They extend from lat. 15° 30′ to 20° 30′ S. The group of 180 reef-bound islands occupy an area of 40,000 square miles. Only 40 of them are inhabited, and the population in 1863 was estimated at 200,000. The people, till the middle of the 19th century, were fierce savages and cannibals. They were then largely converted to Christianity. In 1851, 50 bodies were cooked and eaten at Nameng. In many wars, undertaken more to gratify revenge than from a desire for conquest, the slaughter of their enemies, and the obtaining the bodies for food, were objects supposed to be as honourably obtained by stratagem and every species of treachery, as by personal strength or courage. Indeed, the extent to which the thirst for blood prevailed, would be incredible, but for the undeniable testimony of many reliable witnesses. Canoes launched over the living bodies of slaves as rollers, houses built on similar foundations, the immediate massacre of all unfortunates in whom were detected the fatal sign of shipwreck, 'salt water in the eyes,'—were practices sanctioned by their religion, the omission of which at the proper season for their performance, was sure to call down the indignation of the gods, and the punishment of the too merciful offenders, and burying alive of parents who had become burdensome to their children, and even of sickly sons by the hands of their own fathers, were events of almost daily occurrence. They discouraged early marriages, and the chastity of the young women was carefully guarded. Some at least of a chief's wives were always strangled on the death of their husband, to accompany him to the other world, and no reluctance was ever shown by women to submit to the sacrifice; nor did young women consider the age of a man as any objection to their marriage, although fully aware that they must probably follow him to the tomb long before the natural termination of their own lives. The name and nature of their future abode differed in many of the islands, but the greater number spoke of Bulu as the place of departed spirits. They prepared and drank kava in the same manner and on the same occasions as the Polynesians. They call it Angona or Yangona, and the use of it was taught them by the Tongans.—*Capt. Elphinstone Erskine, Islands of the Western Pacific*, p. 268.

FILARIA MEDINENSIS, *Linn.* Guinea worm. This is often about 3 feet long, and is very troublesome when it occurs about the sinews of the feet and leg. A species of Filaria inhabits the pearl oyster, and Dr. Kelaart thinks it causes the formation of the pearl.

FILE-FISH, or Leather Jacket, the genus Balistes of the South Seas.

FILFIL. ARAB., PERS. Pepper; hence—

Filfil-Ahmar, cayenne pepper.

Filfil-Aswad, black pepper, Piper nigrum.

Filfil-Burree, wild pepper, fruits of Vitex trifolia, agnus-castus, and negundo.—*Irvine.*

Filfil-i-Daraz, long pepper, Piper longum.

Filfil-Gird, Piper nigrum.

Filfil-i-Siah, black pepper.

Filfil-i-Surkh, cayenne pepper, red pepper.

Filfil-Mueh, pepper root.

Filfil-ul-Jibbel, Capparis Sinaica.

FILFOT of Buddhists is the swastika or mystic cross.

FILICIUM DECIPIENS. *W. A. Prod.* p. 172.

Rhus decipiens, *W. A.*	Pehimbia, . . . SINGH.

This very elegant fern-leaved tree grows in Ceylon, throughout the Western Ghat forests of the Madras Presidency, and is very abundant in the moist forests of the Animallays up to 4000 to 4500 feet elevation. The timber is strong, and valuable for building purposes; it flowers in December and January, and ripens its fruit in March. It has been introduced into gardens.—*Beddome.*

FILIGREE, a style of delicate wirework used for ornamenting gold and silver, introduced by the Italians, who call it Filigrana, a word compounded of Filum, a thread or wire, and Granum, a grain or bead; this is in allusion to the early practice of ornamenting the wirework with small beads. Wire used for this purpose is seldom drawn round, but flat or angular. The display of filigree work in the Great Exhibition of 1851 was very wonderful for delicacy of workmanship and fantastic beauty. The chief exhibitors were from Sardinia, Turkey, the Ionian Islands, and Malta, but the native silversmiths of Cuttack have long been noted for the fineness, neatness, and lightness of their filigree work. This kind of work is executed for the most part, under supervision, by mere boys, whose nimbler fingers and keener eyesight are supposed to enable them to bring out and put together the minute patterns with more distinctness and accuracy than their elders can; comparative cheapness is perhaps another reason for their employment. The ruling rates for this filigree work are from 2 to 2½ rupees; that is to say, taking the first rate, 2 rupees or 4s. is charged for every rupee weight of finished silver work, namely, 1 rupee for workmanship, and 1 rupee as the price of the silver. The filigree work in gold of Dehli and other places is famed. Next to muslins and embroidered fabrics, filigree work is that for which Dacca is most celebrated; but the art is also practised in great perfection at Cuttack, and in Sumatra and China. The articles usually made at Dacca are lady's ornaments, such as bracelets, ear-rings, brooches, chains, necklaces, etc., and attar-dans and small boxes for natives. The design best adapted for displaying the delicate work of filigree is that of a leaf. The apparatus used in the art is exceedingly simple, consisting merely of a few small crucibles, a piece of bamboo for a blow-pipe, small hammers for flattening the wire, and sets of forceps for intertwisting it. The drawing of silver and gold (*i.e.* silver covered with gold) wire, used as thread in embroidery, is extensively carried on in several places, and Benares is celebrated for this art. There are several varieties of silver and gold thread (badla) made at Dacca, as Goolabatoon, for the embroidery of muslins and silks; Goshoo, for caps and covering the handles of chowries; Sulmah, for turbans, slippers, and hookah snakes; and Boolun, for gold lace and brocades. Some of it is drawn almost as fine as a hair. In the time of Aurangzeb, a quantity of this article was made yearly for the court at Dehli. A hundred sticks covered with it, and plain gold and silver badla to the amount of £2000 in value, appear among items composing the Mulboos khas nuzr, or present of royal clothing annually sent to the emperor. The Trichinopoly filigree work is as light and elegant as that of Malta or Genoa.

Among the manifold and various manufactures of China, the gold and silver tinsel cloths of Pekin stand deservedly in high estimation; their chief value arises from the peculiar property which they possess of never tarnishing or becoming discoloured. The gold and silver filigree work of the Chinese equals any ever produced by ancient Venetian masters, and their chasing in silver is unrivalled. The art of enamelling on silver is also brought to great perfection in China, and specimens surpass any ever produced at Genoa.—*Sirr's China and the Chinese*, i. 387, ii. pp. 1-4; *Dr. Taylor.*

FINANCIAL members of the Government of India have been—James Wilson, 29th November 1859; Samuel Laing, Sir Charles E. Trevelyan, W. N. Massey, Sir Richard Temple, John Forbes, David Inglis, Sir William Muir, and Sir John Strachey, 23d December 1876, removed 1880, and Major Baring, 1881.

FINCH, a name for several genera of birds. The bull-finches are of the genus Pyrrhula, P. erythraca, P. erythrocephala, P. Nipalensis, P. aurantiaca, and also of the genus Pyrrhoplectes, P. epauletta. The rose-finches, of the genera Propyrrhula, P. subhemachala, Carpodacus rubicilla, C. erythrinus, Propasser rodopeplus, P. thura, P. rhodochlamys, P. rhodochrous, P. pulcherrimus, P. frontalis, P. Murrayi, P. Nipalensis, and P. puniceo, with Callacanthis Burtoni, and the gold-finch of the Himalaya, Carduelis caniceps; also Metoponia pusilla, with species of Fringilla montifringilla and Fringillauda nemoricola. The Himalayan gold-finch (Carduelis caniceps) at first sight bears a striking resemblance to the European species, but differs in wanting the black on the head. The pretty little red-fronted finch (Metoponia pusilla, *Pall.*) is a tenant of waste places, and usually seen singly or in small flocks, feeding on the seeds of a species of wormwood, on which gold-finches, house-sparrows, and one or other of the roseate grosbeaks also feed. This finch is easily recognised by its small size, a red spot on the forehead, and yellowish-brown on the upper parts; the females and young are darker in plumage. Its song is sweet and melodious, and in consequence it is in great request as a cage bird in the Panjab, to which it is brought from Afghanistan.

FINGER-NAILS are allowed by Buddhist devotees of China to grow to a great length.

FINJAN. Arab. A cup without handles.

FINN, a race occupying Finnland in the north of Europe, supposed to be of the same stock with the Turkoman, the Chude, the Laplander, and the Magyar of Hungary. Rask was of opinion that the language of the Lap, the Finn, and Basque of Europe, and of the Cuchuwari, Kohati, Toda, Gond, and Lar of India, also the Brahui and the Japanese, were of one stock.

It is generally supposed that the original seat of the Finnic tribes was in the Ural mountains, and their languages have been therefore called Uralic. From this centre they spread east and west and southward in ancient times, even to the Black Sea, where Finnic tribes, together with Mongolic and Turkic, were probably known to the Greeks under the comprehensive and convenient name of Scythians. On the evidence of language, the Finnic stock is divided into four branches, the Chudic, Bulgaric, Permic, and Ugric.

The *Chudic* branch comprises the Finnic of the Baltic coasts. The name is derived from Chud (Tchud), originally applied by the Russians to the Finnic nations in the north-west of Russia. Afterwards it took a more general sense, and was used almost synonymously with Scythian for all the tribes of Central and Northern Asia. The Finns properly so called, or, as they call themselves, Suomalainen, *i.e.* inhabitants of fens, are settled in the provinces of Finland (formerly belonging to Sweden, but since 1809 annexed to Russia), and in parts of the governments of Archangel and Olonetz. Their number is stated at 1,521,515. The Finns are the most advanced of their whole family, and are, the Magyars excepted, the only Finnic race that can claim a station among the civilised and civilising nations of the world. Karelian and Tavastian are dialectical varieties of Finnish. The Esth or Esthonians, neighbours to the Finn, speak a language closely allied to the Finnish. It is divided into the dialects of Dorpat (in Livonia) and Reval. Except some popular songs, it is almost without literature. Esthonia, together with Livonia and Kurland, forms the three Baltic provinces of Russia. The population on the islands of the Gulf of Finland is mostly Esthonian. In the higher ranks of society Esthonian is hardly understood, and never spoken. Besides the Finn and Esthonian, the Livonian and the Lapp must be reckoned also amongst the same family. Their number, however, is small. The population of Livonia consists chiefly of Esths, Letts, Russians, and Germans. The Lapp inhabit the most northern part of Europe. They belong to Sweden and Russia.

The *Bulgaric* branch comprises the Tcheremissians and Mordvinians, scattered in disconnected colonies along the Volga, and surrounded by Russian and Tartaric dialects. The general name given to these tribes, Bulgaric, is not borrowed from Bulgaria on the Danube; Bulgaria, on the contrary, received its name (replacing Moesia) from the Finnic armies by whom it was conquered in the 7th century. Bulgarian tribes advanced from the Volga to the Don, and, after remaining for a time under the sovereignty of the Avars on the Don and Dneiper, they advanced to the Danube in 635, and founded the Bulgarian kingdom.

The third, or *Permic* branch, comprises the idioms of the Votiakes, the Sirianes, and the Permians, three dialects of one language. Perm was the ancient name for the country between long. 61° 76′ E., and lat. 55° 55′ N. The Permic tribes were driven westward by their eastern neighbours, the Voguls, and thus pressed upon their western neighbours, the Bulgar of the Volga. The Vostiaks are found between the rivers Vyatka and Kama. Northwards follow the Sirianes, inhabiting the country on the Upper Kama, while the eastern portion is held by the Permians. These are surrounded on the south by the Tartars of Orenburg and the Bashkir, on the north by the Samoyedes, and on the east by Voguls, who pressed on them from the Ural.

These Voguls, together with Hungarians and Ostiaks, form the fourth and last branch of the Finnic family, the *Ugric*. It was in 462, after the dismemberment of Attila's Hunnic empire, that these Ugric tribes approached Europe. They were then called Onagur, Saragur, and Urog; and in later times they occur in Russian chronicles as Ugry. They are the ancestors of the Hungarians, and should not be confounded with the Uigur, an ancient Turkic tribe.

FINOKI. JAP. A cypress tree of Japan, which yields a light whitish wood of a good substance, and does not absorb water.—*Thunb.*

FIR. Sung-shu, CHIN. The fir tree is met with on most of the hills of China, and its wood is used in carpentry and for fuel.—*Smith.*

FIRDUSI, author of the Shah Namah, a Persian poem, was born at Rizvan, near Taos, about A.D. 940, and died there 1020. He wrote it at the request of Mahmud of Ghazni, but, disappointed of the promised reward of 30,000 drachmas, he returned to Toos, his native city, and there died. A little way from the gate of the entrance of Toos there stands a dome ornamented with lacquered tiles, so small as seemingly to form a part of some private house. The dome covers the dust of this celebrated poet, who, after the treatment he received from Mahmud, retired there to die (Fraser's Khorasan, p. 519). Mahmud was not, however, a niggard in his rewards of the learned, and had sent the money after Firdusi, but he had died before it arrived. The Shah Namah relates to three heroes, Jamshid, Faridun, and Garshasp, as the earliest representatives of the generations of mankind. In his satirical description of Mahmud's court at Ghazni, he says he has had enough of plunging after plunging into it, and would fain rest awhile from ducking into a sea without bottom and shore, in which he has fished long but has not found any pearl. Firdusi is the first of the epic poets of Persia, and few countries can boast of a greater genius. His chief work, the Shah Namah, or Book of Kings, contains, mixed with allegory and fable, almost all the Persians know of their ancient history. It contains 120,000 verses.

FIRE.

Nar,	ARAB.	Ignis,	LAT.
Mee,	BURM.	Api,	MALAY.
Feu,	FR.	Fuego,	SP.
Feur,	GER.	Narapu,	TAM.
Ag, Agn,	HIND.	Nepu,	TEL.
Fuoco,	IT.	Atish,	PERS., TURK.

Fire is frequently mentioned in the writings of ancient and of some modern nations as an object to be worshipped or reverenced. Perhaps the chief culture enjoined in the Vedas is that of Agni, the god of Fire, and that of the Sun; and with the ancient Persians, as with the Parsees of the present day, the worship of these two objects formed the principal religious duty. Fire is preserved in Hindu, in Parsee, and in Buddhist temples, and seems to be the inextinguishable fire alluded to in Leviticus vi. 13, as their lamps are kept perpetually burning, according to the injunction to the Hebrew Levites, 'The fire shall ever be burning upon the altar; it shall never go out.'

The three fires of the Hindu ritualistic worship are the Garhapatya, or perpetual fire, maintained by a householder; the Ahavaniya, or consecrated fire, taken from the preceding, and prepared for receiving oblations; and the Dakshinagni fire, taken from either of the former, and placed towards the south.

An Agnihotra Brahman preserves the fire which was kindled at the time of his investiture with

the poita, and never suffers it to go out; using the same fire at his wedding, and in all his burnt-offerings, till at length, after his death, his body is burnt with it. The sacred fire kindled by Montezuma was preserved at Pecos down to our own times. The Natches of N. America preserved a sacred fire, and believed that frightful calamities would ensue if ever the fire were extinguished at both temples at once. Even among Christians of the present day, according to Mr. Robertson, on the eve of the Greek Easter-day, the ceremony of receiving the αγιος-πυς or holy fire is performed in the chapel at Jerusalem. The fire bursts from the sepulchre, and the pilgrims of the Greek communion light their torches at it, believing that they receive it from heaven. The lamps and candles which some Christian sects keep in their churches are remnants of the ancient and modern culture of fire. The Athenians had a perpetual fire kept by widows; among the Romans it was kept by virgins. The Greeks had one in the temple of Apollo. The Chaldeans adored fire; and when it went out, it was a presage of all sorts of misfortunes to the state.

In the Hebrew books, the Supreme is mentioned as having appeared in fire or encompassed with this element, as when he showed himself in the burning bush, and descended on Mount Sinai in the midst of flames, thunder, and lightning (Exodus iii. 2. xix. 18). Fire is also a symbol of the deity (Deuteronomy iv. 24). In this awful manner he showed himself to Isaiah (ch. vi. 4); to Ezekiel (ch. i. 4). The Psalmist describes the chariot of God as composed of flames (Psalm xviii. 12-14). And the second coming of Christ is represented as in the midst of consuming fire (2 Thessalonians i. 8; see also Daniel vii. 10). The wrath of God is compared to fire (Psalm xviii. 8); and so are those effects of his displeasure, famine, war, and pestilence (Psalm lxvi. 12; Jer. xxi. 12). To this element the Lord is compared (Malachi iii. 2), referring to his judgment upon the wicked who are consumed like the dross of metals, and to the effects of his grace refining the righteous like pure gold. The influences of the Holy Ghost are also compared to fire (Matthew iii. 11), in reference to the tongues or flames of fire that rested on the heads of the apostles (Acts ii. 3), and to the work of regeneration on the human soul, illuminating, quickening, purifying, and inflaming with gratitude, love, and zeal. The angels of God are represented under the emblem of fire (Psalm civ. 4); and a column of flame directed the marches of the Israelitish camp during the night seasons in the wilderness (Exodus xiii. 21). Fire anciently fell from heaven to consume the victims sacrificed to the Lord, and this was an indication of his regard and approbation. And this is thought to be the manner in which Jehovah signified his acceptance of Abel's sacrifice. Fire also fell upon the offering made by Moses (Leviticus ix. 24), on those of Manoah (Judges xiii. 19, 20), on Solomon's (2 Chronicles vii. 1), and on Elijah's (1 Kings xviii. 38). The fire which descended from heaven, first upon the the altar constructed by Moses in the tabernacle, and again on that erected by Solomon at its consecration, was constantly fed and preserved by the priests, and was regarded as celestial or hallowed fire, first kindled by the Lord himself, to instruct mankind that the origin of all spiritual good is from above, and that we are not to warm ourselves with the sparks of our own kindling.

What kind of fire is meant by the 'strange fire' of Leviticus x. 1, Numbers iii. 4, xxvi. 61 (see also Leviticus xvi. 12, ix. 1[illegible] 24, and Exodus xxx. 9), is doubtful; but a Brahman should maintain three fires (Vikrama and Uravasi, Introduction, i. p. 190), two mentioned in a sakta of the Rig Veda and the Apastamba Sutra, are the Sabbya and Avasathya, the precise purport of which names is not known to the pandits, nor explained in the Bashya. The literal sense would be the fire of the assembly and the fire of the village, as if a sacrificial fire was sometimes maintained in common.

The subdivision of one fire into the three fires of the Hindu ritualistic worship is ascribed by the Mahabharata, and the rest to Pururavas. The commentator on the former specifies them as the Garhapatya, Dakshina, and Ahavaniya, which Sir William Jones (Manu. ii. p. 231) renders nuptial, ceremonial, and sacrificial fires; or rather—(1) household, that which is perpetually maintained by a householder; (2) a fire for sacrifices, placed to the south of the rest; and (3) a consecrated fire for oblations,—forming the Tretagni, or triad of sacred fires, in opposition to the Laukika, or merely temporal ones.

It may be that the taking of fire from other than the established place was called 'strange.' The fire used by Hindus for the funeral pile ought to be obtained from the sacred fire, but it is at present the common practice of the Hindus of ordinary rank in the Western Provinces of India to procure fire from an out-caste to light the funeral pile. On the eastern side of India, the fire used in the household sacrifices of their homes is obtained from the hearth fire. That used in their incremation is from the lamp lit in the ceremonial when a person is moribund; but the lamps of the temples are lit only by Brahmans, and taking fire from other than the altar would be 'strange.' A Hindu, as indeed also a Mahomedan, does not 'blow' out a lamp with his breath, the Hindu believing that a deity intervenes. In the whole of Central and Southern Asia, and with Hindus, Parsees, and Mahomedans, to blow out a light is considered very wrong.

On the east side of the fortress of Gwalior, where myriads of warriors have fattened the soil, phosphorescent lights at one time often appeared. They are termed Shahāba by the Rajputs, perhaps from the Arabic shahāb, a meteor. Colonel Tod dared as bold a Rajput as ever lived to approach them; but he replied, men he would encounter, but not the spirits of those erst slain in battle. Such fires the northern nations believed to issue from the tombs of their heroes, and to guard their ashes; they called them Hauga Elldr, or 'the sepulchral fires,' and they were supposed more especially to surround tombs which contained hidden treasures. When the intrepid Scandinavian maiden observes that she is not afraid of the flame burning her, she is bolder than that bold Rajput, for Sri-Kishen, who, as above related, was shocked at the bare idea of going near the sepulchral lights, was one of three non-commissioned officers who afterwards led thirty-two firelocks to the attack and defeat of 1500 Pindaris. At present the Kasak or Kirghiz do

not spit on a fire; and in Khiva, Khokand, in many other parts of Africa and Asia and Europe, the custom continues of dancing round fire. Everywhere with the Hindus there is believed to be a fire which does not burn a person, attributed to Siva the Mahadeva, written also Seo or Siu; and annually, in the Dekhan, the fire-worship of Mahadeva is performed, in which the devotees run or jump through great fires, attributing their escape to the interposition of that Hindu deity. In the North Arcot district of the Madras Presidency, a fire festival custom prevails annually, in which the people walk through fire, but accidents occur, ending in death.

Abul Ghazi relates that he allowed his wives before their confinements to pour grease on to the fire, to guess from the splutterings of the flame whether they would have boys or girls. This superstition is still practised in Central Asia, and finds its counterpart in the melting of wax or lead by European girls on New Year's eve, to see from the shapes into which it runs whether they will be married in the course of the year (Vambery, Bokhara, p. 283). So the Kirghiz, though professing Mahomedanism, threw grease on their fires. They and the people of Wakhan and Badakhshan dislike blowing out a light. Spiegel asserts, in an article which appeared in the Ausland under the title Das östliche Turkestan, that in the 7th century after Christ, Turkish tribes in the north of the Tien-shan were fire-worshippers.

Fire is produced from several woods by friction. In India, from the Isora corylifolia; in New Zealand, by friction of the woods of the Myhoe or Melicytus ramiflorus, of the Aralia polygama or Pate, and of the Kaikomako trees. The wood used to provide fire in Tahiti is that of the Hibiscus tiliaceus, which is also used for shoulder-poles and outriggers for steadying a canoe. Its blunt point is rubbed in a groove till the dust takes fire. Fire is kindled in the Sandwich Islands by twirling a sharp-pointed bit of wood over a small slab. The Aleutians manage the upright stick with a string in the manner of a gimlet or borer. They also rub sulphur on two stones, and strike fire from them over moss strewed with sulphur (Kotzebue's Voyage, iii. p. 259, in Jam. Ed. Journ. vi.). The Guacho of the Pampas takes an elastic stick about 18 inches long, and presses one end against the breast, the other in a hole in the piece of wood, and then rapidly turns the curved point like a carpenter's centre-bit.—*Wilson's Hindu Theatre; The Toy Cart; Art*, p. 112; *G. Bennett*, p. 418; *Colebrooke on the Religious Ceremonies of the Hindus, Asiatic Res.* xxi. p. 241; *Sonnerat's Voyage*, pp. 77, 78; *Story of Nala*, p. 102; *Robinson's Travels, Palestine and Syria*, i. p. 282.

FIREBACKS, species of the Gallus partridge.

FIRE-CLAY. Sang-i-dalam, HIND. A kind of clay, very common in many parts of India, from which bricks can be made that resist the action of great heat.

FIREFLY, little luminous insects, species of Lampyris and Elater. The lower part of the body has some apparatus for emitting a bright phosphorescent light. Usually it is emitted in flashes at intervals of a second, and it is interesting to guess where the creature in its flight will next show itself. But occasionally the light is continuous.

'As fade the upper skies,
Each thicket opes ten thousand eyes,—
Before, beside us, and above,
The firefly lights his lamp of love,
Retreating, chasing, sinking, soaring,
The darkness of the copse exploring.'

Fulgora candelaria is the Chinese firefly. F. lanternaria is another. The Elater beetles have over 70 species in tropical America. E. noctilucus occurs in India.—*Heber*, i. p. 247. See Ægiceras; Insects; Lampyrides.

FIREPLACES, in the eastern and southern parts of Asia, are usually the hearths alluded to in Jeremiah xxxvi. 22: 'There was a fire on the hearth burning before him.' Hindu houses have neither chimneys nor fireplaces. In the cold weather, the rich burn wood in brass or earthen pans, placed in any part of the room; the indigent burn sticks on the floor. The hearth or fireplace is commonly taken to mean the livelihood, or means of supporting a family. If the family be scattered into, say, three parties, the expression would be, 'I have three fireplaces burning.' Speaking of a family ruined and dispersed, the Persians say, 'Oojak-ishan koor shood,' Their fireplace is darkened; and the people of India say, 'Ghar men charāgh nahīn,' The house is without a lamp; also 'Chūlay men āg nahīn,' There is no fire on the hearth.

FIRE TEMPLE, the name usually applied to the places of worship of the Parsee religionists. Their Hormusjee Wadia fire temple in Bombay was established about A.D. 1839; the Nowsarec, A.D. 1763; the Surat, in A.D. 1822;. the Oodwara, A.D. 873—it is the oldest. An annual service is held in a morning of the beginning of November. In the evening the Parsee streets in the Bombay Fort and the Bazar Gate street are illuminated, and flags and evergreens adorn the principal entrances.

FIREWOOD.

Bois de chauffage, . FR.	Lakri, ... HIND.
Brennholz, . . . GER.	Lena para el fuego, . SP.

Firewood is the chief fuel used in the E. Indies, and the less valuable trees of each locality are cut. On the east coast of the Peninsula the fuel woods used are—

Canthium parviflorum.	Randia dumetorum.
Hymenodyction excelsum.	Anisonema multiflora.
Acacia speciosa.	Cassia auriculata.
Gmelina Asiatica.	Phyllanthus, *sp.*
Peltandra.	Acacia leucophlæa.
Vatica laccifera.	Maba buxifolia.
Grewia rotundifolia.	Dichrostachys cinerea.

The fuel trees at Simla are chiefly—

Quercus incana.	Pinus excelsa.
Rhododendron arboreum.	Cedrus deodara.
Andromeda ovalifolia.	

with other jungle trees and stout underwood. At Kussowlee and Kanawar, the contractors supply principally 'chir' (Pinus longifolia), which grows wild on the adjoining hill-sides, and splits easily. The only forbidden wood is 'behul' (Grewia oppositifolia), which emits an offensive smell in burning. The villagers use as fuel the withered stems of Euphorbia pentagona and thorny bushes.

In the Panjab, the woods used are—

Alsine, *sp.*	Hippophae rhamnoides.
Artemisia sacrorum.	Juniperus communis.
Calligonum polygonoides.	Juniperus excelsus.
Caragana pygmæa.	Periploca aphylla.
Crozophora tinctoria.	Rhazya stricta.
Ephedra Gerardiana.	Rosa Webbiana.
Eurotia ceratoides.	Tanacetum tomentosum.

Near the Panjab railway lines, Phulai (Acacia modesta) furnishes a hard wood, which is perhaps the best fuel given by any wild tree. It is only found in quantity near Amritsar and Jullundur. Jhand or kandi (Prosopis spicigera) covers very large areas in the central tract near Lahore, and grows more partially over many parts to the south. Its wood is open-grained and softish, and is very subject to the attacks of white ants; but it furnishes a fair fuel, and has been the chief source of supply for the locomotives in the Panjab. Next to it, as to quantity of fuel furnished, come the tamarisks, furas, lei, pilchi, etc. (Tamarix orientalis and T. Indica), which, from some miles south of Lahore, cover hundreds of square miles of the low land. A kikar or sissoo tree, under tolerably favourable circumstances, attains a girth of about 30 inches in ten years, and gives about 4 maunds (328 lbs.) of dry fuel. 200 trees yielding 800 maunds (65,600 lbs.) of dry fuel might be grown on an acre in ten years. Various species of Salsolaceæ abound in the more saline dry parts of the Doabs of the Panjab. West of the Beas, Karil, the Capparis aphylla, a considerable shrub, is a common brick fuel in many places in the Panjab; as also is the jal, wan, or pilu, Salvadora oleoides over-abundant south of Lahore. Along some of the rivers in the south the bahn (Populus Euphratica) is not uncommon, but its wood is very light. The smaller tamarisk, T. Indica, becomes fit for felling in eight or ten years. For the fuel of the Indus steamboats on the Delta, the mangrove is used.

FIREWORKS.

Feux de artifice, . . Fr.	Marchun, Rabok, Malay.
Feurwerke, . . . Ger.	Fuoco artifiziale.
Atishbazee, Guj., Hind.	Fuegos artificiales.

In Eastern countries the people have superb displays of pyrotechnic skill. The fireworks are of various forms, represent animate and inanimate things, such as trees, tigers, ships, elephants, men, sea-fights, eclipses of the sun and moon. They are manufactured in the principal cities. Green fire is produced by green baryta, chloride of potash, and sulphur; red fire from strontia, chloride of potash, sulphur, and charcoal; blue fire from chloride of potash and sulphur. Fireworks imported into India in the years 1874-5 to 1879-80 ranged in value about 3 to 5 lakhs. The natives of India are passionately fond of fireworks, and at marriages and other important festivals they gratify their taste.

FIROZAH, Turkis, or the turquoise. Firoza-rang, turquoise blue. This mineral is found at Khojend, in Mawar-u-Nahr or Transoxiana, at Shebavek, in Kirman, and in a mountain of Azerbijan, where the mine was discovered before Ahmad bin Abd al Aziz composed his Treatise on Gems. He describes the mine at Nishapur as most celebrated from early ages for that particular kind of turquoise entitled Abu Ishaki, which, says he, averts evil from those who wear it, conciliates the favour of princes, augments wealth, preserves the sight, ensures victory over an adversary, and banishes all unpleasant dreams. The ancient sages, when first they beheld a new moon, immediately after fixed their eyes, says he, on the firozah.—*Ouseley's Travels*, i. p. 211.

FIROZ KOHI, an Aimak tribe from the town of that name, 63 miles from Teheran. They are of Persian origin, and their forefathers fought Timur bravely when that conqueror subjugated their country. After they were driven by him into the mountains south of Mazenderan, they there defended themselves most desperately; but they were eventually defeated and carried by him into Herat.—*Ferrier, Journ.* p. 196. See Aimak.

FIROZPUR, a town and military cantonment in the Firozpur district of the Panjab, situated in lat. 30° 56′ 42″ N., and long. 74° 38′ 24″ E. The revenue district is between lat. 30° 8′ and 31° 11′ N., and between long. 74° 3′ 30″ and 75° 27′ E.; area (1878), 2739 square miles; population in 1868, 549,253. The Dogra and Bhatti form the leading Rajput tribes, and bear the reputation of being lazy and thriftless.—*Imp. Gaz.*

FIROZ SHAH, emperor of Dehli. He wrote an account of the occurrences of his reign, and called it Futuhat-i-Firoz Shahi.

FIROZ-u-DIN TAGHALAQ ascended the throne of Dehli A.D. 1351, and died at the age of ninety, on the 23d October 1388. He was just and liberal-minded, erected many (700) public works, some of which still remain, amongst others an irrigation canal from the point in the Jumna where it leaves the mountains, by Karnāl to Hansi and Hissar. It reaches to the river Gagar, and in former times was connected with the Sutlej, the nearest river in the Panjab. The British restored 200 miles of it to beyond Hissar. Ferishta relates that he obtained acquittances from the relatives of all who had suffered from the violence of his uncle, Muhammad Taghalaq (A.D. 1325–51), and deposited the sealed acquittance in his uncle's tomb. —*Elph. India*, p. 356; *Tr. of a Hind.* ii. p. 216.

FISHES of the South and East of Asia.

Samkat, . . . Arab.	Pisces, ... Lat.
An-gna, ... Burm.	Ikan, ... Malay.
Fisk, ... Dan., Sw.	Mahi, ... Pers.
Visschen, ... Dut.	Rybi, ... Polish.
Poisson, ... Fr.	Piexes, ... Port.
Fisch, ... Ger.	Rub, ... Rus.
Ichthus, ... Gr.	Pescados, . . . Sp.
Dag, ... Heb.	Min, ... Tam.
Match'hi, Matchli, Hind.	Chapu, ... Tel.
Pesce, ... It.	

During the 18th and 19th centuries, this branch of the natural history of the East Indies has received the attention of many learned zoologists. Bloch, in 1785, published his splendid work on Auslandische Fische. This and his Ichthyologie, and the continuation of the latter by Schneider, contain many Indian forms, as does Lacépedes Histoire des Poissons, 1798–1803. In 1803 there appeared Dr. Patrick Russell's book in two volumes, containing descriptions and figures of 200 fishes collected at Vizagapatam on the coast of Coromandel. In 1822, in a 4to volume, Dr. Hamilton gave an account of 269 fishes found in the river Ganges and its branches, with a volume of plates. The voluminous work by Baron Cuvier and M. Valenciennes, Histoire Naturelle des Poissons, published in Paris in 1828 and following years, was of great value to science. A beautiful volume of much importance, the Fauna Japonica, was published in 1847 by MM. Ph. Fr. de Siebold, C. J. Temminck, H. Schlegel, and W. de Haan, Lugduni Batavorum 1847. In 1841 there was issued at Berlin the Systematische Beschreibung der Plagiostomen by Dr. J. Müller and Dr. J. Henle, which included many of the genera and species of the seas in the S. and E. of Asia. Dr. M'Clelland of the Bengal Army, in 1842, in the

Calcutta Journal of Natural History, described the fresh-water fishes which Dr. Griffiths had collected; and subsequently, in 1843, he described a collection made at Chusan and Ningpo. In 1834 Mr. J. W. Bennett published a Selection of Rare and Curious Fishes found on the Coast of Ceylon. Drs. Ruppell in 1828 and Peters in 1868 described the fishes of the Red Sea and those found southwards to Mozambique; and the fishes near the Cape were described by Dr. Smith. Dr. Day, in 1865, published his Fishes of Malabar, the new species in which were lodged in the British Museum. The fishes of China and Japan were described by Sir John Richardson in the Report of the British Association in 1845. Dr. M'Clelland published a memoir on the Indian Cyprinidæ in the As. Res. xix. p. 217. Colonel Sykes wrote on the Fishes of the Dekhan in the Transactions of the Zoological Society in 1841. Fische aus Caschmir were described by MM. von Hugel and Heckel in 1838. Dr. Kelaart of Ceylon paid much attention to the ichthyology of the island. Dr. Theodore Cantor in 1850 furnished, in the Bengal Asiatic Society's Journal, a minute account of 292 fishes of the Malay Archipelago. From 1845 to 1860 Dr. P. Bleeker, in numerous contributions on the fishes of the Eastern Archipelago, added greatly to the stock of knowledge of the seas of the region from Penang to Japan. Mr. E. Blyth, long the Curator of the Bengal Asiatic Society's Museum, from time to time published in the Bengal Asiatic Society Journal, notices of fish; and T. C. Jerdon, a medical officer of the Madras army, in the Madras Literary Society's Journal, gave several contributions on the fresh-water and on the salt-water fishes of the Peninsula. Dr. A. Günther, in addition to all that he had written in the Proceedings of the Zoological Society and other journals, in the years 1859 to 1870 brought out eight volumes of a catalogue of the fishes in the collection of the British Museum; and in 1866, conjointly with Lieut.-Colonel L. Playfair, published an illustrated volume on the Fishes of Zanzibar, the Seychelles, and Chagos Islands. Dr. Klunzinger, in 1870–1871, published a detailed account of the Fische des Rothen Meeres. Later still, Dr. Day has written (1875–77) an invaluable work on the Fishes of India, Ceylon, and Burma, with many monographs and numerous reports on the sea and fresh-water fishes and fisheries of India. The scientific arrangement of this branch of Natural History is as follows :—

Sub-Class, Teleostei. Order, Acanthopterygii.

Fam. Percidæ. *Gen.* lates, serranus, grammistes, diploprion, genyoroge, mesoprion, myriodon, ambassis, apogon, apogonichthys, cheilodipterus, dules.
Fam. Pristipomatidæ. *Gen.* therapon, pristipoma, diagramma, lobotes, datnioides, gerres, scolopsis, dentex, smaris, cæsio.
Fam. Squamipennes. *Gen.* chætodon, toxotes, chelmo, heniochus, holacanthus, scatophagus, ephippus, drepane.
Fam. Nandidæ. *Gen.* plesiops, badis, nandus, catopra.
Fam. Mullidæ. *Gen.* upeneoides, mulloides, upeneus.
Fam. Sparidæ. *Gen.* crenidens, sargus, lethrinus, sphærodon, pagrus, chrysophrys, pimelepterus.
Fam. Cirrhitidæ. *Gen.* cirrhites, cirrhitichthys.
Fam. Scorpænidæ. *Gen.* scorpæna, sebastes, pterois, apistus, amphiprionichthys.
Fam. Teuthididæ. *Gen.* teuthis.
Fam. Berycidæ. *Gen.* myripristis, holocentrum.
Fam. Kurtidæ. *Gen.* kurtus, pempheris.

Fam. Polynemidæ. *Gen.* polynemus.
Fam. Sciænidæ. *Gen.* umbrina, sciæna, otolithus, sciænoides.
Fam. Xiphiidæ. *Gen.* histiophorus.
Fam. Trichiuridæ. *Gen.* trichiurus.
Fam. Acanthuridæ. *Gen.* acanthurus, naseus.
Fam. Carangidæ. *Gen.* caranx, seriola, seriolichthys, naucrates, chorinemus, trachynotus, psettus, platax, psenes, equula, gazza, lactarius.
Fam. Stromateidæ. *Gen.* stromateus.
Fam. Coryphænidæ. *Gen.* coryphæna, mene.
Fam. Nomeidæ. *Gen.* cubiceps.
Fam. Scombridæ. *Gen.* scomber, thynnus, cybium elacate, echeneis.
Fam. Uranoscopidæ. *Gen.* uranoscopus, ichthyscopus.
Fam. Trachinidæ. *Gen.* percis, sillago.
Fam. Pseudochromides. *Gen.* opisthognathus, pseudoplesiops.
Fam. Batrachidæ. *Gen.* batrachus.
Fam. Pediculati. *Gen.* antennarius.
Fam. Cottidæ. *Gen.* synancidium, synanceia, minous, pelor, chorismodactylus, polycaulis, platycephalus.
Fam. Cataphracti. *Gen.* dactylopterus, pegasus.
Fam. Gobiidæ. *Gen.* gobius, apocryptichthys, sicydium, gobiodon, periophthalmus, boleophthalmus, eleotris, amblyopus, trypauchen.
Fam. Callionymidæ. *Gen.* callionymus.
Fam. Cepolidæ. *Gen.* cepola.
Fam. Blenniidæ. *Gen.* blennius, salarias, andamia, petroscirtes, tripterigium, xiphasia.
Fam. Sphyrenidæ. *Gen.* sphyrena.
Fam. Atherinidæ. *Gen.* atherina.
Fam. Mugilidæ. *Gen.* mugil.
Fam. Aulostomatidæ. *Gen.* fistularia.
Fam. Centriscidæ. *Gen.* amphisile.
Fam. Trachypteridæ. *Gen.* regaleeus.
Fam. Pomacentridæ. *Gen.* amphiprion, premnas, dascyllus, pomacentrus, glyphidodon, heliastes.
Fam. Labridæ. *Gen.* labrichthys, labroides, cheilinus, epibulus, anampses, hemigymnus, stethojulis, platyglossus, novacula, julis, gomphosus, coris, cymolutes, pseudodax, callyodon, pseudoscarus, chærops, cossyphus, cheilio, scarichthys.
Fam. Labyrinthici. *Gen.* anabas, polyacanthus, osphromenus, trichogaster.
Fam. Ophiocephalidæ. *Gen.* ophiocephalus, channa.
Fam. Rhynchobdellidæ. *Gen.* rhynchobdella, mastacembelus.
Fam. Chromides. *Gen.* etroplus.

Order, Anacanthini. Sub-order, Anacanthini-Gadoidei.

Fam. Gadidæ. *Gen.* bregmaceros.
Fam. Ophiididæ. *Gen.* brotula, Bleekeria.

Sub-Order, Anacanthini-Pleuronectoidei.

Fam. Pleuronectidæ. *Gen.* psettodes, pseudorhombus, platophrys, heterosomata, solea, achirus, synaptura, plagusia, cynoglossus.

Order, Physostomi.

Fam. Siluridæ.

Sub-Fam. Silurinæ. *Gen.* macrones, arius, batrachocephalus, ketengus, osteogeniosus, plotosus, akysis, erethistes, rita, pangasius, pseudeutropius, callichrous, wallago, olyra, silurus, chaca.
Sub-Fam. Amblycepinæ. *Gen.* clarias, saccobranchus, silundia, ailia, ailiichthys, eutropiichthys, sisor, gagata, hemipimelodus, bagarius, pseudechencis, glyptosternum, amblyceps, exostoma.

Fam. Cyprinidæ.

Sub-Fam. Cyprininæ. *Gen.* psylorhynchus, Mayoa, discognathus, oreinus, schizothorax, labeo, osteochilus, cirrhina, scaphiodon, carassius, semiplotus, catla, mola, barbus, nuria, aspidoparia, rohtee, barilius, danio, perilampus, chela.
Sub-Fam. Homalopterinæ. *Gen.* homaloptera.
Sub-Fam. Cobitidinæ. *Gen.* apua, acanthophthalmus, acanthopsis, cobitis, lepidocephalichthys, botia, Jerdonia, nemacheilus, misgurnus.
Fam. Cyprinodontidæ. *Gen.* cyprinodon, haplochilus.
Fam. Scopelidæ. *Gen.* saurus, saurida, harpodon.
Fam. Scombresocidæ. *Gen.* belone, hemiramphus, exocetus.
Fam. Pseudoclupeidæ. *Gen.* chanos, elops.

Fam. Clupeidæ. *Gen.* chirocentrus, clupea, coilia, chatoessus, dussumieria, engraulis, opisthopterus, pellona, raconda, spratelloides, corica, megalops.
Fam. Notopteridæ. *Gen.* notopterus.
Fam. Symbranchidæ. *Gen.* monopterus, amphipnous, symbranchus.
Fam. Muræniдæ. *Gen.* muræsenesox, muræsnichthys, ophichthys, anguilla, moringua, muræna, gymnomuræna.

ORDER, Lophobranchii.

Fam. Syngnathidæ. *Gen.* syngnathus, nerophis, gastrotokeus, acentronura, ichthyocampus, doryichthys, hippocampus.

ORDER, Plectognathi.

Fam. Gymnodontidæ. *Gen.* xenopterus, tetrodon, triodon, diodon.
Fam. Sclerodermi. *Gen.* triacanthus, balistes, monacanthus, ostracion.

SUB-CLASS, CHONDROPTERYGII.

ORDER, Plagiostoma. SUB-ORDER, Selachoidei, or Sharks.

Fam. Carchariidæ. *Gen.* carcharias, galeocerdo, zygæna, mustelus.
Fam. Scylliidæ. *Gen.* scyllium, stegostoma, chyloscyllium.

SUB-ORDER, Batoidei, or Rays.

Fam. Pristidæ. *Gen.* pristis.
Fam. Rhinobatidæ. *Gen.* rhynchobatus, rhinobatus.
Fam. Torpedinidæ. *Gen.* narcine, astrape.
Fam. Rajidæ. *Gen.* platyrhina.
Fam. Trygonidæ. *Gen.* trygon, urogymnus, pteroplatea.
Fam. Meliobatidæ. *Gen.* meliobatis, ætobatis, rhinoptera, dicerobatis.

From the continuity of the waters from the Red Sea and east coast of Africa, through the Indian Ocean and Bay of Bengal, into the seas of the Archipelago, around Australia and into the Pacific and Polynesia, it is probable that many of the fishes which are now only known as inhabiting a particular sea, will be found throughout that line of ocean, and that the great natural barriers will be found to be Cape Horn and the Cape of Good Hope on the south, to pass either of which capes would throw the fish of the tropical seas into cold regions.

The fishes chiefly used as food in the fresh waters of India, belong to the order Physostomi, especially in its siluroid, cyprinoid, and herring families, as also those classed in the spiny-rayed or Acanthopterygii order. Mahomedans in Sind eat siluroids; but in general the siluroid, or scaleless fishes, as sharks, skates, rays, eels, are not eaten by Mahomedans or Jews. They are very foul feeders. All the spiny-rayed or acanthopterygian fishes found in India are good for food. Of the siluroid fishes, the Magur or Singi (Saccobranchus), and many others, and the carps (Cyprinidæ), are all useful for food. The herring family (Clupeidæ) are all good, and eels are reckoned wholesome, though natives of India refuse them.

The Andamaners eat the tetrodons, and the Burmese eat the large yellow Xenopterus naritus; others of these genera are deemed poisonous.

The fecundity of fishes is very various. In a hilsa fish, 1,023,645 eggs have been counted; in a migratory barbel, 410,500 eggs. The monogamous non-migratory fish appear to breed frequently, and they protect their offspring. In the Cirrhina reba, *H. B.*, a polygamous non-migratory carp, Dr. Day found 41,500 eggs; and in a siluroid, Callichrous canio, *H. B.*, 47,444; whilst a monogamous walking-fish or ophiocephalus had only 4700. The striated walking-fish breeds twice a year, in December and June. The male constructs a nest with its tail amongst the vegetation, and by biting off the ends of the weeds that grow in the water. Here the eggs are deposited, the male keeping guard; but should he be killed or captured, the place is taken by his partner. The parents are very fierce at this time, and defend their offspring with great courage.

Dr. Day tells us of vast shoals of some forms of fishes approaching the shores or shallows of the Indian coasts at certain seasons, mostly for breeding purposes, and these are often destitute of means of defence, becoming food for their stronger neighbours, or are captured by man for consumption. He arranges the Indian fishes, in their economic relations, into three classes,—*First*, the more strictly predaceous forms, which are more or less *migratory* in their habits, generally in order to follow and prey upon their weaker neighbours; some of these congregate in shoals, while others lead more solitary lives. *Secondly*, *non-migratory* fishes, some of which are likewise predaceous. These usually reside along the shores and backwaters, being almost confined to the littoral zone, although a few may extend their range into brackish waters on the one hand, or into the deep sea on the other. *Thirdly*, those which are more preyed upon than predaceous, consisting of such as live in large assemblages, being gregarious in their habits, and others which lead a more solitary existence.

Among the first, or *predaceous division* of marine fishes, are some gregarious forms, but such are scarcely so numerous or well fitted for destroying their neighbours as those which are more solitary in their habits. Their best-known representatives are found in the spiny-rayed or acanthopterygian order, or else among the cartilaginous or chondropterygian fishes. Some attain to a great size. Thus, Dr. Cantor alludes to a sea perch (Serranus) exceeding 130 lbs.; and Dr. Russell to another, which was 7 feet long, 5 feet in girth, and upwards of 300 lbs. in weight. Nearly allied are the Lutiani or Mesoprions, which, although of somewhat inferior size, excel them in usefulness to man, owing to their being more numerous and coming closer in-shore. The fishes of both genera are generally excellent as food, especially when not too large, and are much employed as such, either fresh, salted, or sun-dried. Among the Sparidæ we find the Pagrus spinifer and several species of Chrysophrys, abundant in places near the shores of India, especially during the cold months, and held in great esteem. In the family of Polynemidæ are some most valuable fishes, all being good as food, and two affording isinglass. Some of these have been known to exceed 300 lbs. in weight, especially in estuaries, where they are not uncommon. The justly celebrated mango-fish of the Bay of Bengal arrives during the S.W. monsoon, about June, and continues through the cold season. It ascends large rivers (from the Mahanadi and Ganges to those of Burma and the eastwards) for the purpose of spawning, and is of great repute for its excellent flavour. Natives term it Tapasi, changed by Europeans into Tupsee-mutchee, the original name being derived from certain ascetics. A similarity has been drawn between their unkempt hair and the long tendrils which in this fish spring from the base of the pectoral fins, and exceed in length that

of the body. The Maigres, Sciænidæ, absent from the Red Sea, become abundant off the coasts of Sind and through the Indian Ocean. Some attain to 5 feet or more in length, but are sought after rather for the isinglass their air-bladders afford than for their flesh as food, the latter being dry and insipid. The sword-fishes (Xiphiidæ) are likewise numerous at times off the Coromandel coast during the cold weather, and their flesh is esteemed by the natives, although not brought to the table of Europeans. The horse-mackerels, or Carangidæ, are among the most important sea forms to the natives, by whom they are highly esteemed as food. They are very abundant along the Coromandel coast, less so down that of Malabar, where the herrings take their place to a great extent. Some attain to a large size, and on the coasts of British India are never found to be poisonous, as is reputed to be the case elsewhere. Caranx Rottleri reaches 5 feet or more in length, but some species never pass 5 or 6 inches. These fishes are gregarious, and not so fitted for predaceous habits as some of those already referred to, while the same remarks likewise apply to the next few genera. The closely allied species of Chorinemus and Trachynotus afford a considerable amount of food to man, but, owing to their being dry and insipid, are generally salted or sun-dried. Pomfrets (Stromateidæ) are justly esteemed by both Europeans and natives, and they are abundantly distributed throughout the Indian Ocean. Coming in-shore in large shoals about June, they disappear as suddenly as they come, some forms entirely departing about September. It is a curious circumstance that in all the adult forms the ventral fins are absent; in the young of the black species they are very long, but become absorbed as age advances. The mackerel family are exceedingly important, and the common Scomber microlepidotus is very abundant along the western coast of India throughout the cold season, and is extensively salted and sun-dried, but, owing to its rapidly tainting, it is rarely brought to the tables of Europeans; it is not nearly so common along the east coast of Madras and Bay of Bengal, but is found at the Andamans. In India its usual length is about 10 inches, but in certain localities it attains to a foot. Some other forms, which grow to a larger size, and are more predaceous than the common mackerel, likewise arrive during the cold season, when they prey extensively on the numerous herrings and other small fish. Among these large species are the tunny and the pelamys; these are terrors to the shoals of sardines, which appear to afford them desirable food. The seer fishes (Cybium) are held in great esteem by Europeans, and when of a medium size, are among the most delicate for the table. They are quite as predaceous as the tunnies, and attain to three feet and more in length. The voracious and dangerous Sphyrænæ, termed sharks in some places, and barracuda in the West Indies, grow to several feet, and all forms are used by the natives as food.

The marine siluroid, sheat, or cat-fishes, which cannot be considered migratory, are known by the long feelers round their mouths and absence of scales, and are of considerable economic value; although not esteemed if eaten fresh, still, numbers are salted for export, while their air-bladders are collected for the isinglass which they afford. Siluroids are mostly found in muddy waters; they are common from Bombay down the western coast, and likewise from the mouth of the river Kistna along the muddy coasts of Bengal and Burma, becoming very abundant in the Malay Archipelago. Among what may be termed the scaled siluroids, a few are excellent eating, but the only one which is found in very large numbers is the bummalo or Bombay duck (Harpodon nehereus). Numerous at Bombay, it is rare all down the Malabar coast, but on the Coromandel side of India a few are taken at Madras; and as we proceed towards Vizagapatam they augment in numbers, and are common along the entire coast of Bengal and Burma, ascending large rivers, but not above tidal influence. Owing to their almost gelatinous character, they are easily sun-dried or salted.

The Chondropterygii, or sharks, rays, and skates, play an important part in Indian sea fisheries. Sharks are found along the whole seaboard, but their carrying off human beings is an uncommon occurrence. In some years they are more numerous than in others, and this is due to the presence or absence of shoals of smaller fish, as sardines. They are captured both for the purpose of extracting oil from their livers, as well as for their flesh, as those of a medium size are cut up, salted, and sold to the poor. Their fins, likewise, are exported to China, where, due to the gelatine contained in them, they are in demand for the purpose of making soups. Rays and skates exist in enormous numbers in the Indian seas, where they attain to a great size. The first appear to be gregarious, and may suddenly arrive, to the dismay of the owner of an oyster bed, as they rarely change their quarters so long as any molluscs are obtainable. Saw-fishes are taken for the same purpose as are sharks.

Of the *non-migratory* forms, some of which are predaceous, there are many in the Indian seas, and some are more directly serviceable to man. Although some of these are small, still they make up by numbers for their deficiency in weight, besides being more readily sun-dried, or salted with brine. The little Ambassis, consisting of small fishes rarely exceeding six inches in length, with the closely-allied Apogons, equally small, are similarly employed as food. The Pristipomas attain to a larger size,—2 feet or more in length,—are more commonly eaten even while fresh, and some species are very numerous. Along the Coromandel coast, species of Synagris are extensively eaten, while the genera Equula and Gerres furnish an immense amount of food, which is consumed by the poor either when fresh or salted. The Mullidæ, so esteemed in some parts of Europe and rejected in others, furnish many Indian forms. They are, however, not esteemed; neither are the beautiful and large Lethrini, nor the more flattened Teuthididæ. The gobies of the sea do not attain to a large size, but are of value owing to their abundance. The spineless Anacanthini, or flat fishes, are by no means uncommon, the largest examples being found off the coast of Sind. The very young of the Indian species, similarly with those in Europe, have an eye on either side of the head, a subject which has been so elaborately examined by Steenstrup in 1864, Mr. Malm in 1868, Dr. Day and others, in order to ascertain how it is that with advancing age both eyes are found on the coloured

side, and the skull appears to be asymmetrical. These fishes are not much esteemed as food by the natives.

Lastly, *those which are more preyed upon than predaceous*, come in large shoals, and are not only of great importance to man, but are the means of inducing larger fish to come nearer in-shore for the purpose of following the assemblages of their weaker neighbours,—mullets (Mugilidæ), of which the seas of India possess about 24 species, some of which ascend tidal rivers or frequent the estuaries. As a rule they are esteemed for food when fresh, both by Europeans and natives, except in Canara, where they are objected to on the grounds that their heads resemble those of snakes. Mullets are extensively salted, and also sun-dried. Some attain a considerable size, while their roes are salted, and considered great delicacies. The pretty little sandsmelts (Atherina), having a burnished silvery band, are taken in enormous numbers; but as they rarely exceed three inches in length, they are commonly sun-dried and exported. The Indian whiting (Sillago) arrives in large assemblages, and is esteemed as a light and wholesome food. The halfbeak (Hemiramphus) is very common, especially during the cold season, while the roes are largely collected along the Malabar coast. But it is among the herring family that we find some of the most important of those fishes which not only afford food to man, but to their larger and stronger relatives. As a rule, they abound more on the Malabar than on the Coromandel coast. The oil-sardine comes in vast numbers, more especially to the western coast, but is uncertain in its movements; occasionally being absent for many consecutive seasons, it returns in enormous numbers. The same may be said of the numerous forms of anchovies, and the great varieties of other genera of the herring family.

There are fishes in Asia which respire atmospheric air direct. They possess respiratory organs in the form of an accessory respiratory sac, distinct from gills, and they are essentially amphibious. The genera of Indian fishes (excluding Chanos) which possess respiratory organs, having a lung-like function, and which are distinct from the gills, are, amongst the acanthopterygians, species of Anabas, Polyacanthus, Osphromenus, and Trichogaster; also species of the Ophiocephalidæ and the genera Clarias and Saccobranchus among the Siluridæ. Of the family Symbranchidæ, is the Cuchia eel (Amphipnous cuchia). The Ophiocephalidæ are very predatory, and their favourite lurking-place is amongst the grass at the margin of a tank. These amphibious fishes, and also the spined eels, Rhynchobdellidæ, retire into the mud of tanks as the water dries up.

In January 1869, in Orissa, Dr. Day dug up in a tank, two feet below the mud, two Ophiocephalus punctatus and three Rhynchobdella aculeata. The Amphipnous cuchia, or amphibious eel, has also been dug out of blue clay. They have blow-holes in the mud, as seals have in the ice. Mr. Boaynge says (America, p. 165) he had seen the natives in the N.E. of India dig fish out of the earth; the fish is called Zamīn ki mutchee (earth-fish), of about 5 to 7 inches in length, flat, and black in colour, flesh hard, and in flavour somewhat like an eel. Tennant tells us (Sketches, p. 354) that in Ceylon, where the country is flat, and small tanks are extremely numerous, the natives are accustomed in the hot season to dig in the mud for fish. Mr. Whiting, the chief civil officer of the Eastern Province, informed him that, on two occasions, he was present accidentally when the villagers were so engaged, once at the tank of Malliativoe, within a few miles of Kottiar, near the Bay of Trincomalee, and again at a tank between Ellendetorre and Armitivoe, on the bank of the Vergel river. The clay was firm but moist, and as the men flung out lumps of it with a spade, it fell to pieces, disclosing fish from 9 to 12 inches long, full grown and healthy, which jumped on the bank when exposed to the sunlight. The Lepidosiren of Africa and S. America is placed midway between the reptiles and fishes, and has gills and true lungs. It has the habit on the approach of drought of burying itself several feet deep into the mud of the ponds in which it usually dwells. It does not appear to possess the power of travelling.

Fishes do travel,—not eels alone, which in all countries can move rapidly over moist land. Theophrastus (De Piscibus), the contemporary of Aristotle, is the first who mentions fishes found in the Euphrates, which in the dry seasons leave the vacant channels and crawl over the ground in search of water, moving along by means of their fins and tail. The travelling powers of the Ophiocephalus amphibeus of Burma are known. The Ophiocephalus striatus, which occurs in the Indian Peninsula, attains a length of upwards of 3 feet. O. gachua grows to one foot long, and Dr. Day believes that they breathe air direct from the atmosphere. Dr. Bowring (Siam, i. p. 10), in ascending and descending the Meinam river, to and from Bankok, was amused with the sight of fish leaving the river, gliding over the wet banks, and losing themselves among the trees of the jungle. Bishop Pallegoix (Siam, i. 144) says fish will wander more than a league from the water. Some years ago, he says, a great drought had dried up all the ponds in the neighbourhood of Ayuthia; during the night torrents of rain fell. Next day, going for a walk into the country, he was surprised at seeing the ponds almost full, and a quantity of fish leaping about! 'Whence have these fish come?' he inquired of a labourer; 'yesterday there was not one.' He replied, 'They were come under favour of the rain.' In 1831, when fish were uncommonly cheap, the bishop placed 50 cwt. in his ponds, but in less than a month nine-tenths escaped during a rain that fell in the night. There are three species of this wandering fish, called Pla-xon, Pla-duk, Pla-mo. The first is voracious, and about the size of a carp; salted and dried, it can be preserved for a year. It is very abundant, is exported to China, Singapore, and Java, and is a particularly wholesome and health-giving fish. Ophiocephalidæ have a great vitality. In China they are kept alive at the markets, and slices are said to be cut off their bodies as required by customers.

Near the rocks of the Ceylon coast are multitudes of the Salarias alticus, which possesses the faculty of darting along the surface of the water, and running up the wet stones and across the sand with the utmost ease and rapidity. Mr. Gosse (p. 122) mentions having seen a species of Antennarium running quickly to and fro on the surface of the great beds of floating sea-weed in the Gulf

Stream, progressing by means of its pectoral and ventral fins, quite out of water. The Hydrargyræ of Carolina leave the drying pools and seek the nearest water, in a straight line, though at a considerable distance. The hassar of Essequibo is the Doras costata. When the water is leaving the pools in which they commonly reside, the yarrow (a species of Esox, *Linn.*), as well as a species of the hassar, bury themselves in the mud, while all the other fish perish for want of their natural element, or are picked up by rapacious birds. The flat-head hassar, on the contrary, simultaneously quit the place, and march overland in search of water, travelling for a whole night in its search. They can live for many hours out of the water, even when exposed to the sun's rays. They project themselves forward on their bony arms by the elastic spring of their tail; their progress is nearly as fast as a man can walk. Sir R. Schomburgh tells us that the hassar are occasionally met with in such numbers in their travels, that the negroes fill baskets with them. If they fail in finding water, they are said to burrow in the soft mud, and pass the dry season in torpidity like the lepidosiren.

The travelling fish of India (Ophiocephalus), possessing an amphibious respiration, is capable of traversing from one pond to another, as necessity or fancy dictates. Jugglers carry them about in order to assist in their performances; while so great is their vitality, that the saleswomen cut portions off them while still alive, for disposal to purchasers, who will only give a decreased price when life ceases to exist. Their mode of continuing their kind is likewise very interesting: they live in pairs, occasionally in the holes made by crabs or birds situated on the banks of rivers, while the forms which reside in tanks construct nests of the grasses growing there. Biting some off and entwining others, they construct a domicile wherein their eggs are deposited, while they protect their young until they are able to shift for themselves.

In Ceylon, the fish most frequently seen travelling is a perch called by the Singhalese Kavaya or Kawhyya, and by the Tamil, Pannei-eri, or Sennal. It is the Anabas scandens, *Cuvier*. It grows to about 6 inches in length, the head round and covered with scales, and the edges of the gill-covers strongly denticulated. Aided by the apparatus in its head, this little creature issues boldly from its native pools, and addresses itself to its toilsome march, generally at night or in the early morning, whilst the grass is still damp with the dew; but in its distress it is sometimes compelled to move by day; and Mr. E. L. Layard on one occasion encountered a number of them travelling along a dusty road under the midday sun. Mr. Layard (Ann. Nat. Hist. Mag. 1853) says it is most tenacious of life. Dr. Hamilton Buchanan says he had known boatmen on the Ganges keep them for five or six days in an earthen pot without water, and daily to use what they wanted, finding them as lively and fresh as when caught.

Mr. Morris, Government agent, Trincomalee, writing to Sir J. E. Tennant on this subject in 1856, mentioned that when inspecting the bund of a large tank at Nade-cadua, he found numbers of fish struggling upwards through the grass in the rills formed by the trickling of the rain. There was scarcely water enough to cover them, but nevertheless they made rapid progress up the bank, and his followers collected about two bushels of them at a distance of 40 yards from the tank. They were forcing their way up the knoll. They were chub, the same as are found in the mud after the tanks dry up. Subsequently, in July 1857, Mr. Morris mentioned that as the tanks dry up the fish congregate in the little pools, till at last you find them in thousands in the moistest parts of the beds, rolling in the blue mud, which is at that time about the consistence of thick gruel. As the moisture further evaporates from the surface, they are left uncovered, and they crawl away in search of fresh pools. In one place he saw hundreds diverging in every direction from the tank they had just abandoned to a distance of 50 or 60 yards, and still travelling onwards. His impression was that this migration takes place at night, or before sunrise, for it was only early in the morning that he had seen them progressing. All in the act of migration had their gills expanded.

Many fish die rapidly in turbid water, and they strive to escape from it. On the 2d August 1878, fish left the Ganges at Mirzapur for the dry land, but huge quantities of rohu, tengra, eels, hilsa, skates, piyasi, saoli, bachwa, and other fish died in the river. The smallest quantity of water, however, suffices to enable the multitudes of small fishes to climb high away from the tanks of India to the high ground, when the water of the tank has become loaded with soil washed down by heavy rain.

Fish-rain.—Dr. Buist, writing in the Bombay Times in 1856, mentioned that in 1824 fishes fell at Meerut on the men of Her Majesty's 14th Regiment, then out at drill, and were caught in numbers. In July 1826, live fish were seen to fall on the grass at Moradabad during a storm. They were the common cyprinus, so prevalent in Indian waters. On the 19th of February 1830, at noon, a heavy fall of fish occurred at the Nokulhatta factory in the Dacca zillah; depositions on the subject were obtained from nine different parties. The fish were all dead; most of them were large, some were fresh, others were rotten and mutilated. They were seen at first in the sky like a flock of birds, descending rapidly to the ground; there was rain drizzling, but no storm. On the 16th and 17th of May 1853, a fall of fish occurred in the zillah of Futtehpur, about 3 miles north of the Jumna, after a violent storm of wind and rain. The fish were from 1½ lbs. to 3 lbs. in weight, and of the same species as those found in the tanks in the neighbourhood. They were all dead and dry. A fall of fish occurred at Allahabad during a storm in May 1835; they were species of the chowla, and were found dead and dry after the storm had passed over the district. On the 20th of September 1839, after a smart shower of rain, a quantity of live fish, about 3 inches in length, and all of the same kind, fell in the Sunderbuns, about 20 miles south of Calcutta. The fish did not fall here and there irregularly over the ground, but in a continuous straight line, not more than a span in breadth. During a tremendous deluge of rain at Kattyawar, on the 25th of July 1850, the ground around Rajkot was found literally covered with fish; some of them were found on the tops of haystacks, where probably they had been

drifted by the storm. In the course of 24 successive hours, 27 inches of rain fell, 35 fell in 26 hours, 7 inches within one hour and a half, being the heaviest fall on record. At Poona, on the 3d of August 1852, after a very heavy fall of rain, multitudes of fish were caught on the ground in the cantonments, full half a mile from the nearest stream. Sir J. E. Tennant, when driving in the cinnamon gardens near the fort of Colombo, saw a violent but partial shower. On coming to the spot, he found a multitude of small silvery fish, from 1½ to 2 inches in length, leaping on the gravel of the high road, numbers of which he collected and brought away; and Mr. Whiting, civil servant of Ceylon, mentioned to Sir J. E. Tennant that he had been often told by the natives at Trincomalee that it sometimes rained fishes at that side of Ceylon.—*Tennant's Sketches*, pp. 342-4; *Gosse, Romance of Nat. Hist.*, 1861.

Tame Fish.—In the neighbourhood of Tavoy are two small currentless basins in the Pagaya river, at the foot of pagoda-crowned precipices, 100 to 200 feet high. The fish, a species of barbel (Barbus Mortonius), are held sacred to the pagodas by the Buddhists, and come in shoals for rice thrown to them by passers-by, as fearless of man as of the barking deer that drink their waters. Mr. Hodgson mentions a similar tameness amongst the large gold-fish at Japan, which almost rose from their natural element to gasp and gasp, with open mouths, at the bread, biscuit, or cake which his little girl was half afraid to offer them (Hodgson's Nagasaki, p. 75). Dr. Oldham also tells us that in the middle of the Irawadi, about 30 miles above the town of Tsengoo, and opposite the small village of Thika-dan, on nearing the island, the headman in the boat shouted out Tet-tet! tet-tet! saying he was calling the fish. The boat was soon surrounded with about fifty large fish, some three or four feet long, a kind of blunt-nosed, broad-mouthed dog-fish. In one group, which he studied more than others, there were ten. These were at one side of the boat; nearly half their bodies protruded vertically from the water, their mouths all gaping wide. The boatmen were feeding them with some of the rice prepared for their own dinners, by throwing little pellets down the throats of the fish. Each fish, as it got something to eat, sank, and, having swallowed the portion, came back to the boat-side for more. The men continued occasionally their cry of Tet-tet-tet! and, putting their hands over the gunwale of the boat, stroked down the fish on the back precisely as they would stroke a dog. This was kept up for nearly half an hour, moving the boat slightly about, and invariably the fish came at call, and were fed as before. The only effect which the stroking down or patting on the back seemed to have, was to cause them to gape still wider for their food. The fish are found in the deep pool formed at the back of the island, by the two currents meeting round its sides, and the phoungyes are in the habit of feeding them daily. It is regarded by the Burmans as quite a sight, which the people come from great distances to see, as well as to visit the pagoda, which is very ancient and much venerated. During an annual March festival, it is not unusual for the visitors to take the fish into their boats, and gild their backs with gold-leaf, as they do in the ordinary way to pagodas; and Mr. Oldham observed remains of the gilding visible on one of the fish. He wished to take one of the fish away, but refrained, as the people seem to regard the act as sacrilege (Mr. Oldham, in Yule's Embassy).

Sacred Fish.—The Hindu races, who worship, in addition to the works of their own hands, so many varied products, and so large a number of mammals and reptiles, do not, seemingly, worship fish. In their religion the Matsya Avatara is the fish incarnation of Vishnu, in which he preserves a man named Manu, with the seeds of all things, in an ark during the deluge. It is the Aryan Hindu tradition of the flood of Noah. A tank or pond with all its contents, may, however, with the Hindus be devoted to a deity; and Colonel Tod mentions that when, one day, he had thrown his net into a lake, which abounded with a variety of fish, his pastime was interrupted by a message from the regent, Selim Singh, 'to tell Captain Tod that Kotah and all around it are at his disposal, but these fish belong to Kaniya.' On which, of course, he immediately desisted, and the fish were returned to the safeguard of the deity. In such sacred tanks fish will feed from the hand; and in the Mahanadi, where it is 3 miles broad, he tells us (Travels, p. 9) fish will follow for miles for a little burnt rice. The amphibious snake-head fish (Ophiocephalus amphibeus) occurs in the fresh waters of Burma, but the natives regard them with superstitious awe, and do not eat them. They have a legend that they were formerly men, changed into fish for their sins; and the Pwo Karen of Tavoy say that if people eat them they will be transformed into lions. The boura chang, a fish of Bhutan, another Ophiocephalus, is believed by the natives to fall from heaven, from the circumstance of its being found after rain far from the water.

Flat-fishes, when very young, swim in a similar way to other fishes, with their dorsal fins above, their anal fin below them, and possessing an eye on either side of the head. As they grow older, this erect position becomes lost, their sides become their upper and lower surfaces, and both eyes are on the superior or coloured side of the body. The adult, when at rest or swimming, usually keeps near the bottom of the water, and progresses by means of a sort of undulating motion of the whole body, and of the unpaired fins. The bodies of these fish are broad, flat, and margined in almost their entire extent by the dorsal, caudal, and anal fins; while not only the muscles, but the skin, the gills, gill-covers, and even the pectoral fin-rays, are less developed on the blind than on the coloured side,—the mouth also being, as it were, bent round to this eyeless side, towards which the anterior part of the face seems to be twisted. It had been known from a very early age that these fishes, when first emerging from the ova, and while in a pellucid condition, have an eye on either side of the head; that by degrees the eye, on what eventually will be the eyeless side, becomes depressed, while at the same time a dark spot appears on the opposite side of the head, so that the fish almost seems to possess three eyes. Double fishes have been observed in flounders, turbot, plaice, soles, etc., and they are seen to swim vertically, and to be more frequently found nearer the surface of the water than those which progress in a normal manner. These double flat-fishes are held in

greater estimation for the table than others which have an uncoloured as well as a coloured side. There are albinos, uncoloured or nearly white on both sides, but still retaining their normal form, but in some which have been carefully examined, no sexual parts could be detected.

Fish is largely partaken of by the Hindu women of Bengal, whilst unmarried or married, but a widow never partakes of it, and the 11th or ekadasi of the increasing moon is a day of close fast to a widow.

The *names of fish* have been given by people from their outward forms and habits, as bird fish; parrot, porcupine, scorpion, frog, and toad fish; pilot fish; rudder, fan, or sail, and sailor fish; angler fish and archer fish; sucking fish, doctor fish; gilt-head, black, blue, and yellow fish; glass eel, gold and silver fish, file and pipe fish, sword fish, saw fish, flying fish; climbing, walking fish; devil fish, sea dragon, and sun fish; transparent sole, luminous shark, pretty fish, albicore, bonito, tunny. The gold fish of China is a species of carp, Carassius auratus. The leather jacket or file fish is a species of the genus Balistes of the South Seas, Andamans, etc. The fan fish, called also sail fish, is said to raise the dorsal fin like a fan, and employ it as a sail. Its dorsal fin is 3½ to 4 feet long, and the fan fish 10 to 14 feet long. Its colour when in the water is a beautiful purple and green, with silvery belly, and displaying a rich variety of brilliant colours. The angler fish, the fishing frog, and the sea-devil are species of the family Lophiadæ, but are not of Asia; the fighting fish of Siam is the Macropodius pugnax, and the glass eel is a species of the Leptocephalidæ.

Fish-hatching.—In China the hatching of fish is extensively practised. The sale of spawn for this purpose forms an important branch of trade in China. The fisherman collects with care, on the margin and surface of water, all the gelatinous matters that contain spawn of fish, which is then placed in an egg-shell, which has been fresh emptied, through a small hole; the hole is then stopped, and the shell is placed under a sitting fowl. In a few days the Chinese break the shell in warm water (warmed by the sun), where they are hatched; the young fish are then kept in water until they are large enough to be placed in a pond. This plan in some measure counteracts the great destruction of spawn by trawl-nets, which have caused the extinction of many fisheries. Dr. Francis Day, a Madras medical officer, made great efforts to introduce ova of exotic fish into India, and made recommendations for the protection of young fry. A few drops of a weak solution of permanganate of lime, added night and morning, sweetens water, and supplies oxygen, and thus diminishes the mortality in fish-hatching.

Luminous Fishes.—The abdominal surface of sharks is said to be luminous, but due to the presence of small invertebrata; and shoals of fish are said frequently to emit flashes of light, perceptible even at great depths. The sand-launce, at night, has a silvery brilliancy, and the cod and other fish after death emit a phosphorescent light. Certain pelagic or deep-sea fishes, as Argyropelecus, Sternoptyx, Ichthyococcus, Maurolicus, Gonostoma, Chauliodus, Stomias, etc., possess luminous organs of a circular form, some being as impressions, others as slight prominences of the skin. In Britain, the pearl-sides (Maurolicus borealis, *Yarrell*) is one of these fishes.

Weapons.—Sheat fishes or siluroids are generally well armed. They have mostly strong dorsal and pectoral spines, often serrated, with which they can inflict dangerous lacerated wounds. In the marine and estuary forms the armature is invariably spinal. Species of Polyacanthus inflict punctured wounds; and the serrated spines on the tails of the skates cause lacerated wounds. The siluroid Thalassophryne has a distinct poison gland; while the Synanceia verrucosa has a tube at each of its dorsal spines, and a poison gland at its base. The wounds are very venomous.

Alausa toli, Cuv. and Val., inhabits the sea of Penang, Malayan Peninsula, Singapore, Borneo, Java, Sumatra, Pondicherry, river Cauvery, and Bombay. Total length, 1 foot 9 inches. Like A. ilisha in Bengal, the A. toli is, by the English of the Straits Settlements, denominated shad or sable-fish, and is equally valued for its flavour. Both are, however, somewhat oily, very rich, and bony. A. toli is remarkable as forming in the Indian Archipelago a distinct and important branch of fishery, principally for the sake of its roe. It is the kind of shad to which Mr. Crawfurd refers as frequenting the great river Siak in Sumatra, and of which the dried roe, of enormous size, constitutes an article of commerce (Crawfurd, Hist. Ind. Archipel. iii. p. 440; Royle on the Production of Isinglass, p. 76). Mr. Moor, in Notices of the Indian Archipelago, etc., says (p. 29), at Bukit Batu (opposite to and a little to the southward of Malacca), a place on the main of Sumatra within the strait formed by the island of Banka, exists an extensive fishery of the trubu fish. The fish itself is sufficiently known in all the neighbouring seas, but found with a roe only here (that is to say in shoals, for it is plentiful at Penang, Malacca, and Singapore), which makes it certain that it repairs to this favoured place for the purpose of spawning. The trubu, about a cubit long, is taken in 3 and 4 fathoms water on a mud bank. About 300 boats are engaged at all seasons in the fishery, with the exception of four days during dead neap tides. The roes are an article of trade seaways, and the dry fishes are sent into the interior of Sumatra. The raja of Siak draws a revenue from this fishery of 72,000 guilders yearly, receiving a certain duty upon the quantity taken. From the rate and amount of this duty, it is ascertained that the quantity of fish caught yearly amounts to between fourteen and fifteen millions. In the Malayan markets the roe is called Telur ikan, the fish-roe. Like the preparation of fermented fish and shell-fish, Balachan, it is largely used by the Malays and Chinese to season and make their food palatable, and it is no less a favourite relish with Europeans in Sumatra. The fresh roe is thoroughly salted, and next partially dried, so as to retain a slight moisture, in which state it is by hundreds closely placed in casks, and thus exported. In the Malayan settlements the price is from 3 to 4 Spanish dollars per hundred. The dealers there export considerable quantities to China, after having taken the precaution to re-pack the roes between layers of salt, and to sprinkle them with arrack. To dress them, they are soaked for about half an hour in water, and then fried. As the roe appears in commerce, it is of an elongated flat shape, measuring from 6 to 8 inches in length, about 2 in breadth, and ¾ of an inch in depth, of

a deep amber colour. The single eggs are larger than those of A. ilisha.

The *Arius* genus of fishes, of the Indian, Malay, and Javanese seas, furnish isinglass. A. arius, *Buchanan Hamilton*, inhabits the Gangetic estuaries near Pondicherry, and the estuaries near Penang, the Malay Peninsula, and Singapore. It is 22 inches long, forms an article of food, and more than any other of the Siluridæ contributes to the isinglass of Indian commerce.

Arius militaris, *Linn.*, 18 inches long, inhabits the Coromandel and Malabar coasts, the Ganges, Irawadi, and the seas and estuaries of the Malay Peninsula. Its air-vessel is preserved as isinglass.

A marine siluroid fish, one of the *Ariinæ*, noted for the males carrying the eggs in their mouths until the young are hatched; consequently during this period they have to abstain from all food.

The bodies of the genus Chanda (Chandi, HIND., silver) are more or less diaphonous.

Batrachus grunniens, *Linn.* The natives of India attribute poisonous qualities to these fishes, and reject them even as manure. The creaking sound they emit has been noted by Buchanan. They are capable of living a considerable time out of their element.

Chelmon rostratus looks for an insect on the foliage overhanging its pool, and suddenly shoots on it from below a drop of water, which brings the insect down. The Javanese keep them for their amusement. Surgeon James, Mitchell, R.N., mentions having seen some archer fish kept in a pond at Java in 1822. In the pond was a pole with cross bits of wood, on which were placed beetles, and the fish discharged from their mouths a small jet of water with such precision as to force them from the twig into the water. These fish were about 5 or 6 inches long, with blackish stripes. Chætodon prætextatus, *Cantor*, like other species of this and the neighbouring genera, expires immediately when removed from its element. It appears to be allied to C. reticulatus and C. lunula, *Cuv. and Val.* The gaudiest fish live among the coral reefs, such as species of the Chætodon, the Balistinæ, and Glyphisodon. The Mesoprion annularis of the Indian Ocean feeds on crustacea, and is distinguished for the beauty of its colours and the symmetry of its form.

Clupeonia perforata, *Cantor*, inhabits the sea of Penang, Malayan Peninsula, Singapore, and Sumatra. Total length, 5¼ inches. They are of delicate flavour, and pass in the Settlements of the Straits as sardines, in imitation of which they are sometimes preserved in oil. It has a resemblance to Alausa argyrochloris, *Cuv. et Val.* (vol. xx. p. 440). The general form, the yellow dorsal fin with a small black spot, give it a certain resemblance to Meletta venenosa, *Cuv. et Val.* (vol. xx. p. 377). Mr. Lewis says that during his official residence at Bencoolen in 1822, great numbers of what were supposed to be this identical species, presented the unusual appearance of having red eyes. Many natives, after having eaten these fishes, were suddenly attacked with violent vomiting, which in cases where remedies were not immediately applied, was known within an hour to terminate fatally. At the same time, such of these fishes with the ordinary silvery eyes were as formerly eaten with impunity. This phenomenon recurred at Bencoolen during the seasons of 1823 and 1825, but not of 1824. It was surmised that the poisonous fishes had fed on a gelatinous substance which at that season exudes from the beautifully coloured coral reefs on that part of the coast of Sumatra. It is, however, more probable that the poisonous fishes were shoals of Meletta venenosa, an inhabitant of the Seychelles and the neighbouring seas, which happened in those seasons to visit Sumatra. M. Valenciennes describes this fish as being poisonous, and producing effects as noted above. In the Straits of Malacca, Clupeonia perforata has never been known to produce bad effects.

Cybium species are the seer fish, largely used as food.

Dussumieria acuta, *Cuv. and Val.* xx. p. 467, pl. 606, is the Tamban bulat of the Malays. Single individuals occur at Penang at all seasons, but numbers from June to September. It is highly valued for its delicate flavour, and passes commonly as a sardine. The latter denomination it shares, however, with Clupeonia perforata, with which it is also confounded by the Malays under the common name of Ikan tamban. Both species have been prepared as *sardines à huile*.

Echeneis naucrates, *Linn.*, occurs at Malacca. The Malays consider this fish to be powerful manure for fruit trees.

Engraulis Brownii, *Gmelin*, inhabits the sea and estuaries of the Malayan Peninsula and islands, China Sea, New Zealand, Madura, Java, Sumatra, Bombay, Coromandel, Bay of Bengal, Gangetic estuaries, Isle of France, Australia, New York, Havana, Jamaica, Vera Cruz, Martinique, Barbadoes, St. Christopher, Rio Janeiro. Total length, 6 inches. In Java, Sumatra, and the Straits of Malacca, large quantities are preserved both for local consumption and exportation to China and India. The delicious *red fish* condiment (Ikan-merah of the Malays), or Malacca fish, used as a relish, is prepared at Bencoolen as follows:—After the heads have been removed, the fishes (those of middling size are preferred) are cleansed, salted (in the proportion of one to eight parts of fish), and deposited in flat glazed earthen vessels. In the latter they are for three days submitted to pressure by means of stones placed on thin boards or dried plantain leaves. The fishes are next freed from salt, and saturated with vinegar of cocoa palm toddy, after which are added powdered ginger and black pepper (the latter mostly entire), and some brandy and powdered red rice. After having been kept for three days, a little more vinegar is added before placing the fishes in well-closed jars or bottles. They should be kept four or five months before being used. The expense of a quart bottle of the condiment is about 30 cents, the selling price one Spanish dollar. The Chinese settlers in the Straits prepare a similar red condiment with slices of Polynemus Indicus and P. tetradactylus, and also prawns.

Red rice is the variety of Oryza sativa called glutinosa (Pulut or Bras sepulut of the Malays), steeped in an infusion of cochineal. In the Straits Settlements red rice is imported from China, and sells at the rate of 10 cents of a dollar per pound.

Equula insidiatrix, *Bloch*, and *Equula longimana*, *Cantor*, also *Gazza equulæformis*, *Ruppell*, are very abundant in the Straits of Malacca at all seasons, and quantities, both fresh and dried, are consumed by the natives.

Guorami, a fish of the Mauritius, is esteemed of more delicate flavour than the salmon or turbot.

Harpodon nehereus, the bummalo or Bombay duck, and *Saurus nehereus* of *B. H.*, has the upper part of its head, back, and sides light grey or dust-coloured, semi-transparent like gelatine, with minute star-like black and brownish dots; the anterior part of the abdomen is pale silvery bluish, rest whitish; cheeks and opercles pale silvery bluish, dotted like the body; fins transparent, coloured like the body, but more closely dotted, so as to appear pale blackish. It inhabits the sea of the Malayan Peninsula and islands, Chusan, Woosung, Canton, Madura, Java, Sumatra, Tenasserim, mouths of the Ganges, Vizagapatam, Bay of Bengal, Bombay, Malabar. The total length is 11 inches. The fish is of most voracious habits, gorging itself with its own species, and other fishes of nearly its own size, and with crustacea (shrimps). It is frequently taken with the stomach and the jaws expanded with prey. It is very short-lived, more so than either S. trachinus or S. myops, and the whole body becomes at certain seasons brilliantly phosphorescent. In the Straits of Malacca it is at all times very numerous, although less so than it is at the Sandheads or in the mouths of the Ganges. Although very rich, it is a great delicacy immediately after it is taken. Salted and dried, it is also highly valued, and in this state it occurs in commerce under the denomination of Bombay ducks, the Bummalo of Bengal, and the Bamiah of Bombay, large quantities of which are annually exported from Bombay and the Malabar coast to all parts of India and to London.

Hemiramphus Russelli, Cuv. and Val., is the Toda pendek of the Malays (pendek, short). The Malays thus denominate all the species of Hemiramphus, to distinguish them from those of Belone (toda) of the Malays. At Penang, H. Russelli is numerous at all seasons, and larger individuals occur at irregular intervals. They appear at European tables under the appellation of guard fish.

Hippocampus mannulus and *H. comes* of the Penang seas, when drying assume the figure of a horse head, and are known to all as the sea-horse. Their movements are most graceful, while by means of a noise somewhat resembling a cough, they appear to be able to communicate one with another.

Macropodus pugnax, Cantor, occurs numerously at the foot of hills at Penang. Like the rest of the family, it is capable of living for some time out of water. The Siamese keep them in jars with water, where the larvæ of mosquitoes is their food, and denominate them Pla kat (Pla, fish; Kat, a fighter). The real fish, however, the exhibition of whose combats is a popular amusement with the Siamese, appears to be a variety of the present species, produced by artificial means, like the varieties of the golden carp of China, and Dr. Cantor names it Macropodus pugnax, *var.* (pl. ii. fig. 4), Pla kat of the Siamese. When the fish is in a state of quiet with the fins at rest, the dull colours present nothing remarkable. But if two are brought within sight of each other, or if one see its own image in a looking-glass, the little creature becomes suddenly excited, the raised fins and the whole body shine with metallic colours of dazzling beauty, while the projected gill membrane, waving like a black frill round the throat, adds something grotesque to the general appearance. In this state it makes repeated darts at its real or reflected antagonist. But both, when taken out of each other's sight, instantly become quiet. This description was drawn up in 1840 at Singapore, where a gentleman had been presented with several by the king of Siam. They were kept singly in glasses with water, fed with larvæ of mosquitoes, and had thus lived for many months. The Siamese are as infatuated with the combats of these fishes, as Malays are with their cock-fights, and stake considerable sums, and sometimes their own persons and their families. The licence of exhibiting fish fights is farmed, and affords a considerable annual revenue to the king of Siam.

The *Osphromenus olfax* and *Trichopodus trichopterus, Pallas*, are likewise very pugnacious amongst themselves.

The *Magura* fish in the Columbo lake is said to grunt under water when disturbed; and Bishop Pallegoix, in his account of Siam, speaks of a fish resembling a sole, but of brilliant colouring with black spots, which the natives call dogs' tongues. It attaches itself to boats, and gives out a very sonorous and harmonious sound (Tenn. ii. p. 470). Dr. Jerdon says, 'I have every reason to believe that this is the so-called sable fish of Trichinopoly, which ascends the Cauvery during the freshes for the purpose of spawning, and is caught for the sake of its roe, which is highly esteemed.' It is called Oolan-min at Madras.

Plagusia potous, Cuvier, the Ikan ledah of the Malays, is of excellent flavour, and, like Plagusia trulla, passes at European tables under the denomination of sole. The species are all distinguished for their tenacity of life. The fishermen at Penang assert that some species of Plagusia shoal at certain seasons.

Plotosus anguillaris and *P. albilabris* both occur in the seas of the Malay Peninsula. At Penang, the latter species is less numerous than the former. Both are eaten by the poorer class of natives. The wounds of both are equally dreaded.

Polynemus longifilis, Cuv., P. paradiseus, *Linn.*, and P. risua, are the mango fish, or tapasi, tapasi mutchi, noticed at page 1109.

Raconda Russelliana, Gray. At Penang, individuals from 4 to 6 inches in length are numerous at all seasons, although less so than they are at the Sandheads and the mouth of the Ganges. The Bengal fishermen denominate the species Potassah-Fessah or Phasah, a generic term, particularly applied to Engraulis phasah, *Buchan.*, and E. telarah, *Buch.* It is a heavy swimmer, and, like the rest of the Clupeidæ, expires immediately on leaving its element. It is chiefly consumed in a dried state.

Scatophagus argus, Linn., is eaten by the natives, though many reject it on account of its reputed disgusting habits. In several which were examined in the estuaries of the Ganges and at Penang, the stomach contained remains of small fishes and crustacea. According to Bennett, it is in Ceylon angled for on hooks baited with a kind of sea-weed (Pendah), of which this fish appears to be particularly fond.

Stromateus niger, the black pomfret of India, is taken abundantly along the coasts of India, and is largely dried for export to the interior. It is

at all seasons taken in abundance in the Straits of Malacca, where, however, it is considered inferior to Stromateus Sinensis, the white pomfret. In a dried state it is largely exported inland, and thus it appears in the bazars of Hindustan, which are chiefly supplied from Bombay. S. Sinensis is the *pample blanche* of Pondicherry. It is justly renowned for its flavour, but it requires to be used when freshly taken. In the Straits and on the Coromandel coast it is abundant at all seasons. At the Sandheads in the Bay of Bengal (21° N. lat.), it occurs, but less numerously. Stromateus argenteus, *Bloch.*, in the Straits Settlements, as well as at Madras, is likewise denominated the white pomfret. In abundance and excellence it vies with S. Sinensis. Stromateus cinereus, *Bloch.*, is abundant at Penang, but probably from its inferior size it is considered somewhat inferior in quality. At the Sandheads it occurs rarely. The various pomfrets are valued by Europeans as food.

Toxotes jaculator, *Pallas*, or archer fish, appears to be the variety described by MM. Cuvier and Valenciennes, from a drawing in Col. Farquhar's possession. The food of several examined consisted of remains of crustacea. In the Straits of Malacca this fish occurs in all seasons, but not numerously. It is eaten by the Malays.

Tetrodon species have the power of inflating the abdomen, and in this state, when taken or handled, they emit a grating sound. They are also remarkable for tenacity of life, which they are capable of sustaining for several hours after having been taken out of their element. They have a peculiar disagreeable odour, resembling that of the Gobioidæ, which continues for several years in specimens preserved in spirits of wine. In the Malayan countries they are considered poisonous, and are even objected to as manure.

Of the *Torpedinidæ*, several genera and species occur, viz. Narcine Indica, Astrape dipterygia, Temera Hardwickii, and Cysteocercus temeræ. Dr. Cantor says large individuals of Narcine are at Penang of rare occurrence, but younger, from 3 to 6 inches in length, are taken at all seasons. In or out of water they may be handled with impunity. Several species of fishes introduced in a jar filled with sea-water, and containing a large Narcine, showed no consequences from the contact, nor did they appear to avoid the torpedo. The food of this and the other Malayan Torpedinidæ consists of crustacea and testacea.

Teuthis, *Linn.* All the species of this genus are edible, though supposed by the Malays of the Straits to be highly poisonous. They are not eaten by them, but set aside among offal of fish to be used as manure.

Trichopodus trichopterus, *Pallas*, like the rest of the family, is capable of sustaining life out of water, particularly if kept in wetted fresh leaves, or occasionally sprinkled with water. At Penang it is numerous in streamlets and ponds, where it is eaten by the poorest classes. The exquisite beauty of the metallic iridescent colours makes these fishes acquisitions in garden tanks. Like Osphromenus olfax, they are very pugnacious among themselves. Both at Penang and at Malacca the Osphromenus olfax (*Commerson*) has been successfully naturalized, though in the former place it is not numerous, but confined to a few ponds. They become tame, so as to appear on the approach of their feeder, and will rise to flies, beetles, and certain flowers, particularly a large hibiscus. About 1830, several were imported, and placed in a tank in the Calcutta Botanical Gardens, where they appeared to thrive; and 300 were introduced into the Madras Presidency, and are said to be doing well. A second species of Trichopodus has been discovered by Dr. Campbell, superintendent of Darjiling, in the rivers at the Sikkim passes in the northern frontier of Bengal.

Warm-water Fishes. — In the hot springs of Kannea, in the vicinity of Trincomalee, the water flows at a temperature varying at different seasons from 85° to 115°. In the stream formed by these wells, M. Raynaud found and forwarded to Cuvier two fishes which he took from the water at a time when his thermometer indicated a temperature of 37° Reaumur, equal to 115° of Fahrenheit. The one was an apogon, the other an ambassis; and to each, from the heat of its habitat, he assigned the specific name of Thermalis. A loach, Cobitis thermalis, and a carp, Nuria thermoicos, were also found in the hot springs of Kannea, at a heat 40° Cent., 114° Fahrenheit, and a roach, Leuciscus thermalis, when the thermometer indicated 50° Cent., 122° Fahrenheit. Fish have been taken from a hot spring at Puri when the thermometer stood at 112° Fahrenheit, and as they belonged to a carnivorous genus, they must have found prey living in the same high temperature (Journ. Asiatic Soc. of Beng. vi. p. 465). Fishes have been observed in a hot spring at Manilla, which raises the thermometer to 187°, and in another in Barbary, the usual temperature of which is 172°; and Humboldt and Bonpland, when travelling in South America, saw fishes thrown up alive from a volcano, in water that raised the temperature to 210°, being two degrees below the boiling point.—*Patterson's Zoology*, part ii. p. 211; *Yarrell's Brit. Fish.* i. p. 16, *in Tennant's Sk. Nat. Hist. of Ceylon*, p. 359; *Cantor in B. As. S. J.*; *Low's Penang*; *G. Bennett*; *Day*, *Fresh-water Fishes*; *Bonynge's America*; *Tod*, *Rajasthan*; *Pallegoix*; *Dr. Hancock*, *in Jam. Ed. Journ.* 1828–9; *Gosse*, *Rom. Nat. Hist.* 1861; *Bowring's Siam*, i. 10; *Sir John Richardson*; *Pennant's Hindustan*; *Buist*; *Bombay Times.*

FISHERIES of Eastern and Southern Asia. The numbers of fish in the seas of India are vast, but the harvest is comparatively untouched; an enormous amount of food remains uncaptured, while famines devastate the contiguous shores. The fisheries of India ought to provide food for multitudes of its people, employing them in fishing, in the ship and boat building, in netting, curing, and transporting them. The heat of the climate early leads to putrefactive changes, and salt is very costly, and consequently the smaller fishes, as ambassis, equula, the Bombay duck (Harpodon nehereus), many of the herring family, and the immature of other fishes, are largely sun-dried, while the larger fishes are cut into slices and also dried in the sun. Wherever, along the southern coasts, salt can be obtained at a cheap rate, there fisheries are largely established, and the fishermen well-to-do.

In Sind, where the duty on salt had been 1a. the maund (of 82¼ lbs.), the value of the dried and salted fish exported was as under in the five years ending—

1857–58,	.	£8,472	6	0	1867–68,	.	£18,725	2	0
1862–63,	.	13,068	8	0	1872–73,	.	22,944	18	0

In the Bombay Presidency the imports of fish steadily decreased with the increasing duty on salt. For curing fish, about one part of salt is needed to three of fish; but where earth-salt is used, about 2½ parts of the earth to one of fish. Wherever salt can be cheaply procured, fisheries flourish, and salt fish is cheap, and largely exported. Species of the genera Lutianus or Mesoprion, though not of large size, come close in-shore, and are largely used, fresh, salted, or sun-dried. The same remark is applicable to Pagrus spinifer and species of Chrysophrys, of the family Sparidæ, abundant in the cold months, and held in great esteem. The Polynemidæ are all good, and some species attain to 300 lbs. in weight. The mango fish ascends large rivers, as the Ganges, Mahanadi, and Irawadi, and others to the east, in June, for the purpose of spawning, and continues there till the beginning of the following year. It is known as the tapasi mutchi, from the long tendrils that spring from its pectoral fins, and which exceed the length of the body. The maigres, species of the Sciænidæ, are abundant off the Sind coast, and throughout the Indian Ocean. Some of them exceed 5 feet in length. They are somewhat insipid as food, but are valuable for their air-bladders, which are made into isinglass.

The sword-fish (Xiphiidæ) are numerous, and are eaten by natives; but to the people the horse-mackerels (Carangidæ) are, from their abundance, the most important of the sea fish. Some attain a large size. These fishes are gregarious.

Species of Chorinemus and Trachynotus afford a considerable amount of food; they are generally salted and dried.

Pomfrets (Stromateidæ) are abundantly distributed throughout the Indian Ocean.

The mackerel family are important, particularly the Scomber microlepidotus, of all the seas around India, in the cold season. It taints rapidly, and is therefore extensively salted and sun-dried. It is commonly about 10 or 12 inches long. Some others of the mackerel family prey extensively on the numerous herrings and other small fish. Amongst these are the tunny and pelamys, which are terrors to the shoals of sardines.

The seer fish (Cybium, *sp.*) are held in great esteem by Europeans, and when of a medium size are the most delicate for the table. They attain to upwards of 3 feet in length, and are quite as predaceous as the tunnies.

The voracious and dangerous Sphyrænæ, termed sharks in some places, are the Barracuda of the West Indies. They grow to several feet in length, and all of the species are used by the natives of India as food.

The siluroid, sheat, or cat-fishes are known by the long feelers round their mouths, and the absence of scales. Numbers are salted for export, and their air-bladders are collected for the isinglass they afford. They are common in the muddy waters around the Indian, Burmese, and Malay coasts, and are very abundant in the Archipelago. One of the scaled siluroids is the bummalo or Bombay duck (Harpodon nehereus). They are always glutinous, and are easily sun-dried or salted. They are in varying abundance round the coasts.

The Chondropterygii, or sharks, rays, and skates, are found along the whole seaboard, following at seasons the shoals of small fish or sardines. They are eaten; their fins are largely exported to China, and oil is extracted from their livers.

Rays and skates exist in enormous numbers in the Indian Seas, where they attain to a great size. They are supposed to be gregarious.

Saw-fishes are taken, and are eaten.

The little Ambassis and closely allied Apogon are valuable from their numbers.

The Pristopomas attain to upwards of two feet. Some species are very numerous, and are eaten fresh and salted.

Species of Synagris are extensively eaten; and species of Equula and Gerres furnish an immense amount of food, both fresh and salted, but, like the beautiful Lethrinæ and the flat-formed Teuthididæ, they are little esteemed.

The Gobies of the sea are not large, but are very abundant.

The spineless Anacanthini, or flat fishes, are not esteemed as food.

The mullets (Mugilidæ) in the Indian Seas are about 24 species, frequenting the estuaries and entering the tidal rivers, and are esteemed as food, except in Kanara, where their snake-like heads prevent the people using them. They are extensively sun-dried and salted, and their salted roes are considered great delicacies.

The pretty little sand-smelts (Atherina) are sun-dried and exported. They have a burnished silvery band, and are taken in enormous numbers.

The Indian whiting (Sillago acuta) arrives on the Indian coasts in large numbers, and are esteemed as a light and wholesome food.

The half-beak (Hemiramphus) is very common, especially in the cold season, and is largely eaten.

The abundant herring family furnish largely food to man and to predaceous fishes. The oil-sardine comes in vast numbers, but irregularly, sometimes after several seasons; and the same may be said of the anchovies and the many others of the herring family.

Maury remarks that the places which are most favoured with good fish markets are the shores of North America, the E. coast of China, with the W. coasts of Europe and South America, and all of these are washed by cold waters, and their markets abound with the most excellent fish. The fisheries of Newfoundland and New England, over which nations have wrangled for centuries, are in the cold water from Davis' Strait. The fisheries of Japan and Eastern China, which almost, if not quite, rival these, are situated also in the cold water. Neither India nor the east coasts of Africa and south of America, where the warm waters are, have been famed for their fish, though 6000 to 8000 fishing vessels of all sizes, American, British, Dutch, and French, are engaged in the New England and Newfoundland fisheries. The sperm whale is eagerly pursued in the Indian and Southern Ocean, and in the Pacific. An immense number of log-books have been discussed at the National Observatory, with the view of detecting the parts of the ocean on which whales are to be found at the different seasons of the year. Charts showing the results have been published, and they form a part of the series of Maury's Wind and Current Charts. Of all the industrial pursuits of the sea, the whale fishery is the most valuable. The sperm whale is a warm-water mammal. The right whale delights in cold water. The fishery of the sperm

whale is largely followed in the Pacific, and in all the South Sea ocean between Africa and America, but wholly by fishers from Europe and America.

The pearl fisheries alone, in the Persian Gulf, employ a great collection of ships; and the pearl fisheries of China and Ceylon are also valuable. In Ceylon about 10,000 canoes and boats are similarly employed. In the east and south of Asia, the people engaged in fishing by stake-nets, bag-nets, and hooks, in boats and in ships, are very numerous, and much of the food of their nations ought to be obtained from the seas and rivers; but the salt monopoly of British India places obstacles in the traffic of salted fish, and the wholesale destruction of fish in their migration to their breeding streamlets, with the minute size of the meshes of the nets used at all seasons, treble the selling prices of fish in the Indian markets. The usual price, there, of fish, is about the same as that of mutton.

Much ingenuity is shown. Tamed otters are trained to aid in fishing; in China, cormorants are trained to catch fish, which they bring to the boatmen. The fishermen of the Indus, when the river is in flood, float themselves down on an open-mouthed earthen jar, and, letting down a three-cornered net, catch the hilsa fish as they pass up the stream.

There are no seas in the world more abounding in esculent fish than those of the Asiatic Archipelago, and a few of them are of excellent flavour. Fish constitutes the chief animal aliment of all the inhabitants, and everywhere of those of the sea-coast who are by profession fishermen. Among the best fisheries are those of the eastern coast of the Malay Peninsula, those of the entire Straits of Malacca, of the northern coast of Java, and of all the coasts of Borneo and Celebes, with those of the Philippine Islands. The taking of the mother-of-pearl oyster, the pearl-oyster in a few places, of the holothuria or trepang, and of the shell tortoise, form valuable branches of the Malayan fisheries.

On the *Bombay* side there are many large boats, with crews of 12 men each, constantly employed in the shark fishery at Kurachee. The value of the fins sent to Bombay varies from Rs. 13,000 to Rs. 18,000 a year, each boat earning perhaps Rs. 1000 annually, or Rs. 100 per man. From this falls to be deducted the cost of material and other charges. Shark-fins form a large part of their profits; they sell in China at about 32 dollars per pikul, or £6 per cwt. In the Macassar market the ordinary selling price is from 15 to 16 dollars, or from £2, 10s. to £3 per cwt. This trade was noticed by Dr. Royle (On the Production of Isinglass, 1842). It affords on some occasions to Bombay alone, taking fish-maws and shark-fins together, as much as 3 lakhs of rupees, and furnishes the chief means of support to at least 3000 fishermen, or, including their families, to probably not less than 15,000 human beings. One boat will sometimes capture at a draught as many as a hundred sharks of different sizes; but sometimes they will be a week, sometimes a month, without securing a single fish. The great basking shark, or mhor, is always harpooned; it is found floating or asleep near the surface of the water, and is then struck with a harpoon 8 feet long. The fish once struck is allowed to run till tired, and is then pulled in and beaten with clubs till stunned. A large hook is now hooked into its eyes or nostrils, or wherever it can be got most easily attached, and by this the shark is towed in-shore; several boats are requisite for towing. The mhor is often 40, sometimes 60 feet in length; the mouth is occasionally 4 feet wide. All other varieties of shark are caught in nets in something like the way in which herrings are caught in Europe. The net is made of strong English whip-cord, the mesh about 6 inches; they are generally 6 feet wide, and are from 600 to 800 fathoms, from three-quarters to nearly a mile in length. On the one side are floats of wood, about 4 feet in length, at intervals of 6 feet; on the other, pieces of stone. The nets are sunk in deep water from 80 to 150 feet, well out at sea; they are put in one day and taken out the next, so that they are down two or three times a week, according to the state of the weather and success of the fishing. The lesser sharks are occasionally found dead,—the larger ones much exhausted. On being taken home, the fins are cut off and dried on the sands in the sun; the flesh is cut up in long stripes and salted for food, and the liver is taken out and crushed down for oil. The head, backbone, and entrails are left on the shore to rot, or thrown into the sea, where numberless little sharks are generally on the watch to eat up the remains of their kindred. The fishermen themselves are only concerned in the capture of the sharks; so soon as they are landed they are purchased by Bania merchants, on whose account all the other operations are conducted. The Bania collect the fins in large quantities, and transmit them to agents in Bombay, by whom they are sold for shipment to China. Not only are the fins of all the ordinary varieties of shark prepared for the market, but those also of the saw-fish, of the dog-fish, and of some varieties of ray or skate. The dog-fish in India has a head very like that of its European congener, from which it differs in all other respects most remarkably. Its skin is of a tawny yellowish-brown, shading from dark brown on the back to dirty yellow on the belly; it is beautifully covered all over with spots, of the shape and size of those of the leopard, similarly arranged. The largest fishery at any given port is probably that of Kurachee, which affords nearly one-tenth of the whole, but the shark fishery is conducted all along the Bombay coast.

There are three great fishing villages in Bombay Island, at Worlee, Sewree, and Mahim. Their fishing boats are worth about Rs. 350 each, and canoes from Rs. 40 to 60 each. A patamar employs from 15 to 20 men, a fishing boat from 10 to 15, a canoe from 3 to 4. *Canoes* are chiefly employed in the coast fishing, in attending the men on the mud-banks, and in landing cargo when there is no depth of water sufficient for larger vessels. They are hollowed out of a single log, and are very serviceable, handsome-looking, well-finished craft. They are propelled either by paddles or sails; when the latter are employed, an outrigger is resorted to; they will bear a surprising stretch of canvas, and make their way rapidly through the water.

The Bombay *fishing boat* is one of the swiftest and most elegant sea-going vessels of that coast, and can beat the best of the English yachts. See Boats, p. 395.

On the western shores of India, nets of various forms and sizes are almost solely employed. The most important is the stake-net fishing in the Arabian Sea, and stakes are often to be found 30 and 40 miles out at sea,—wherever, indeed, a bank within half a day's sail of land presents itself; the fishermen are quite enterprising enough to extend their operations to any distance, but there is no use in their going further off than they can return with their fish to the market fresh. The fishing stakes vary from 50 to 150 feet in length; they are built up of successive pieces of wood, the lower being frequently the long straight trunk of the coconnut or palmyra tree. As many as five or six pieces of wood, from 8 to 10 inches in diameter, are used in the construction of a single stake. They are scarfed across each other, the scarfing being from 3 to 5 feet; the pieces are fastened together by strong rectangular fillets of wood. Two or three boats are employed in towing the stake out to sea. Its point is made wedge-shaped; there is a hole near the point of the wedge, through which a rope is passed. The two ends of the rope are made fast to boats anchored at a considerable distance off; other boats now proceed and haul up the upper end of the stake till the point is found to descend by its own weight. When it has once caught hold of the mud, the rope is released from its lower end, and the boats to which it was attached are employed in steadying the top in the direction of the run of the tide. At high water, two boats are made fast, one on each side, to the top of the stake, which is forced by their weight 10 or 12 feet into the mud. Stakes are thus put in successively, often to the extent of some miles at intervals of 20 feet from each other. Betwixt each pair is extended a long purse-net, the circumference of the mouth of which is about 60 feet, so that when attached to the stakes it exhibits an aperture 20 feet across, and 10 feet perpendicularly, the upper edge being a little above high water. The purse is from 100 to 170 feet in length, terminating in a point. The meshes gradually diminish in size from the mouth to the further extremity, being about 6 inches at the former, and three-fourths of an inch at the latter. The fish are carried into this by the tide, and entrapped; boats are always in waiting at high and low water, to secure the capture and reverse the nets. Also, in the creeks and shoals, lines of stakes and nets, often several miles in length, are run along where the sludge is exposed at low water. The upper edge of these is considerably under high-water mark, and the fish are in consequence entrapped by them on the retirement of the tide; breaks are left at intervals to secure their admission. Close along shore, fishing grounds, about half an acre in area or so, and in a semicircular form, are built. An aperture is left in the extremity of each of these, into which a net is placed as the tide begins to recede, and a considerable capture of the lesser-sized fish secured. Such are the fixed implements of the Bombay fisherman.

Of the moveable implements, the most frequent is a conical net, of which the lower lip is loaded with pieces of lead and turned up inwards. The material of which it is made is fine twine, and the meshes small. It is from 8 to 12 feet in diameter, and is only used in-shore. The fisherman holds it by the top, while he gives it a quick twirl, something betwixt that given to the American lasso and common quoit. Throwing it to the distance of some yards, it spreads fully out as it reaches the water; when pulled down and collapsing by means of the lead, it closes at the mouth as it approaches the bottom. The fisherman now approaches and pulls it up by the apex, when the fish are found enwrapped in it. Though this net sometimes attains a weight of 60 pounds, the dexterity with which it is thrown is wonderful. There are various spoon-nets and purse-nets of different shapes and sizes, and a bag of muslin on a hoop about 3 feet in diameter, this last being employed to catch the young prawns and smallest-sized fish, that would escape through any mesh however fine. There is also a long trail-net with which the fishermen wade neck deep through the water, but the mode of using it does not appear to be in any way peculiar or interesting. The mud-banks and shoals in the creeks abound in eels, sometimes reaching the length of 2 or 3 feet. The fishermen wade through the mud till they detect these by the bubbling up or disturbance of the water. They then strike them with a harpoon or spear, with a fine bamboo shaft 8 or 10 feet in length. Having pinned them against the ground, they draw them out with a hook about the same size as the spear, also on a shaft. They are very dexterous in catching the little fish or crabs which lurk under the stones close by the shore, with their hands. The crabs when caught are immediately stripped of their claws, and so prevented from getting away. Of these there are a wonderful variety on the Bombay shores, many of them of the greatest beauty.

The Bombay fisherman's mooring anchor is generally of stone, from 4 to 5 feet in length, four-sided and pyramidal, the apex cut off. At base it is from 6 to 8 inches square, and from 4 to 6 at top. Through the top is a hole, through which a cable or hawser passes. Near the base are two holes at right angles to each other. Through these pieces of wood are thrust, corresponding to the prongs or flukes of the anchor. The whole weighs from 80 to 150 lbs., according to the size of the vessel, and answers very well the purposes intended.

The Bombay fishermen are a strong-made race of men, and are the only labourers in India amongst whom a great degree of obesity is observed. They are much given to the use of intoxicating drinks. A set of boats and nets belong to a dozen or so of fishermen, one often advancing the capital required to be contributed by the others; the capture is divided amongst them on their reaching the shore, and is immediately taken charge of and carried to market by the women, who carry their baskets on their heads. The men, when so employed, carry theirs in baskets swung at the opposite ends of a bamboo across the shoulders. The women who carry the fish to market are commonly followed by ten or a dozen crows, who constantly watch for anything that may escape, every now and then making a dash at the basket itself.

Southern India.—On the sea-coasts of the S. of India, Muræna maculata, *B. Ham.*, Ophiocephalus striatus, *Bloch.*, O. marulius, *Buch.*, O. gachua, *Buch.*, Wallago (Silurus) attu, *Bloch.*, W. Malabarici, *Cuv. et Val.*, Hemibagrus (Bagrus) punctatus, *Jerdon*, Hypselobagrus (Silurus) cavasius, *Buch.*,

E. insidiatrix, *Bloch.*, Atherina Forskalii, *Ruppell*, and species of Ambassis, Polynemus, Hemiramphus, and Chætodon are dried and largely exported to the interior. Of the better known salt-water fishes of a wider geographical distribution, such, for instance, as are valued as articles of food, at the three distant points, Calcutta, Madras, and Bombay, the market of the first is the least rich in varieties, in consequence of its greater distance from the sea. The abundance of the supply, however, makes up for what it wants in variety, and the large demand for fish affords a livelihood to great numbers of fishermen, who every night spread their nets in the river and in the salt-water lake. The Lates nobilis, different species of Polynemus, and the Mugil corsula, daily cover the tables of Europeans, who will more readily recognise these fishes under the names of the begti or cockup, sudjeh, tapsi (mango fish), and the Indian mullet. At the Sandheads are to be found some of those delicious fishes which are more familiar to the residents of Madras and Bombay,—for instance, the Indian soles, the roll-fish, and above all the black and white pomfrets and the bummalo or Bombay duck. Of these, the Indian mullet is the most widely distributed, being common in the Straits of Malacca, the Bay of Bengal, the Persian Gulf, the Red Sea, and also at the Cape of Good Hope.

The Sunderbuns sea fishery is carried on to a very small extent, chiefly because the distance to Calcutta is too great to allow of the carriage of fish in a fresh state. The only class of fishermen who have sea-built boats inhabit villages situated near the entrance of the Hoogly. Their chief and most profitable employment consists in attending with their boats on the shipping entering and leaving the river, for which they receive 16 rupees per diem. Whenever this employment fails, they resort to work with their nets, which they drag during high water along the coasts of the Sunderbuns. Two or three times are, generally speaking, sufficient to load a boat with fishes and shell-fish, a truly prodigious quantity being brought up in a few hauls. The larger portion of the fish are gutted and sun-dried. The Polynemus sulish or saccolih enters the mouths of the Ganges in shoals. The kharrah, or Indian mackerel, a species of Scomber, is rather uncommon in that estuary; but from the Burmese coast great numbers in a dried state are annually imported into Bengal. The cartilaginous fishes abound in numbers and species, and are remarkable for their wide geographical distribution. The sharks enter the rivers to a considerable distance from the sea, and shark skin is used by the native workmen for polishing wood and ivory, while the shark fins are largely exported to China.

The bazars in Calcutta are always stocked with an ample supply of dry fish, which is consumed partly by the European and native shipping of that port, and partly by the poorer classes of Bengal and the Upper Provinces. Cargoes of this article are annually imported by the Burmese and Arabs. These dried fishes consist chiefly of the bummalo, which sells in Calcutta at the rate of four or five rupees a hundred, in Indian mullet, the sudjeh, the begti, and the kharrah or Indian mackerel. The demand for dried fish exists along the coasts of the Peninsula. At Bombay large quantities of the bummalo are consumed and exported. At the mouths of the Indus the fishery is extensive; and some fish sounds are there procured from a Sciæna, but they may also be those of other fish, as the fish maws are very different in form from the isinglass sent from Bengal. Dr. M'Clelland in his paper called attention to the very important subject of increasing the supply of fish in the interior of India. Wherever there are any large pieces of water for the purpose of irrigation, as in the Peninsula of India, these he conceived might support quantities of fish, if proper kinds were selected, and pains taken to destroy the injurious animals, in the season when the water is sufficiently low for the purpose. He also suggested that at the different sanatoria which have been established in the mountains, it would be desirable and easily practicable to form rivaria, which would at all times yield a supply of fish. This might be done by damming up a portion of some of the valleys through which the mountain streams pass.

On the *Madras* side, where a boisterous surf beats for ever on the shore, the fishers use the catamaran and fishing lines, but nets are also largely used; and when shoals visit the coast, great bag-nets several hundred yards long are thrown from masula boats. The catamaran of Ceylon and the Coromandel coast carries two and three fishermen, and, with a sail set, they take advantage of the land and sea breezes to fish several miles from land, returning home about sunset. Every river is exhaustingly searched by the nets of the land fishermen.

Further India.—The great Irawadi river, and the seas in which the Mergui and E. Archipelagos are enclosed, abound in fish, and the Malays shoot their great stake nettings far into the ocean. The shallows between Penang and Province Wellesley are covered with such nets. The wealth of these eastern rivers and seas is boundless.

The fishermen supplying the markets of Penang and Singapore are principally natives of China. Their fishing boats vary from one to three tons burden; they are of a slight make, and calculated to ply at but short distances from the shore. They are pulled by oars, and seldom carry sails. The nets are made of twine, tanned with mangrove bark. The bamboo fishing-stakes are clumsy contrivances. That they answer well enough in fine weather, is more owing to the riches of the sea and their sheltered position, than to the ingenuity of the contrivance, or the durability of the materials. In nautical skill the Chinese fishermen of the Straits Settlements are far behind the Malays. The fishmongers are natives of China, but they form a class far superior to the fishermen. Their trade comprises the branches of fresh fish, dried fish, isinglass (fish maws), fish roes, red fish, sardines, sharks' fins, balachan, fish manure, and trepang. The fishermen dispose of their boat-loads to the fishmongers, who assort the different kinds in heaps, over which sea-water is continually poured, and from these the daily customers are supplied. Comparatively few varieties of fishes appear on the tables of Europeans, but Malays and Chinese reject but very few kinds. The daily surplus fish are cured by the fishmongers. The process commences with a partial abrasion of the scales, after which the larger fishes are opened lengthwise, and gutted. Water is repeatedly poured over the fishes, till blood and impurities have

disappeared, when they are placed in casks in flat layers, between which is thrown a quantity of salt. In this state the fishes remain from 24 to 48 hours, when they are exposed to the sun, and frequently turned, till they are thoroughly dried. The smaller kinds are not opened, nor are they all salted before drying in the sun. The little care bestowed upon the curing appears, however, to be sufficient for local consumption, and none of the settlements in the Straits export dried fish. The pikul of 133⅓ lbs. sells from 3 to 7 Spanish dollars, valued at 4s. 6d.; the catty being 1⅓ lb., of which 100 go to the pikul.

Mr. Crawfurd, after stating that the fisheries of the Indian islands form a most valuable branch of their commerce, and that a great variety of the fish caught are dried in the sun, observes that fish maws, shark fins, and trepang are sent to China in large quantity. The trepang, swala, or beche-de-mer, often called sea-slug, one of the tribe of Holothuria, is an unseemly-looking molluscous animal, which constitutes in quantity and value one of the most considerable articles of the exports of the Indian islands to China. There are fisheries of trepang in every island of the Indian Archipelago from Sumatra to New Guinea, and not less than 8000 cwt. were yearly sent to China from Macassar, the price ranging from 8 Spanish dollars per pikul to 20, and as high as 115, according to the quality. The same author states that shark fins are exported to China from every maritime country between the Arabian Gulf and the East Indian Islands. A pikul of shark fins usually sells in China as high as 32 Spanish dollars or £6, 1s. per cwt.; which high price makes it evident that they are only articles of luxury for the use of the rich. In the market of Macassar the ordinary price is about 15 Spanish dollars or £2, 16s. 8½d. per cwt. Fish maws often bring as high as 75 Spanish dollars per pikul, or £14, 3s. 6d. per cwt., in the market of Canton.

Fish Traps in the Archipelago are made of basket-work, are baited with small fry, and afterwards sunk by means of stones, their position being indicated by long bamboo fishing-buoys.—*Earl*, p. 37.

Sharks' Fins of commerce are not, however, exclusively selected from sharks (Squali), but equally from rays (Raiæ), and at Penang composed of the genera,—Stegostoma, Carcharias, Sphyrna, Pristis, Rhinobatus, Trygon, and Myliobatis. Of all fishes, sharks and rays are the most valuable to Chinese. The flesh and entrails of all, not even the electric rays (Torpedinidæ) excepted, are eaten either fresh or dried; the skin is used for polishing or converted into shagreen; gelatine is obtained from the larger fins, glue from the smaller. All except the caudal fins are cut at the root, so as to leave as little flesh as possible. The root is dipped in wetted lime (chunam), then dried in the sun, and packed promiscuously in gunny bags, each containing from one half to one pikul. According to the value in the Chinese market, the fishmongers assort the fins in two kinds, white and black. The white consist exclusively of the dorsal fins, which are on both sides of a uniform light colour, and reputed to yield more gelatine than the other fins. In China the lovers of gelatinous soups pay from 30 to 40 Spanish dollars per pikul of white fins. The pectoral, ventral, and anal fins pass under the denomination of black fins. The colour, however, varies according to the species from buff to grey or brown, and most of them are of two different colours, the upper surface being dark, the lower light. The black fins, for obvious reasons the most numerous, are supposed to yield a comparatively small quantity of gelatine, and sell in China at from 15 to 20 Spanish dollars per pikul.

In *China*, at least one-tenth of the river and seaside population derive their food from the water, and much ingenuity is shown. *Nets* are woven of hempen thread, and boiled in a solution of gambier (Uncaria gambier) to preserve them from rotting. The *fishing smacks* which swarm along the coast go out in pairs, partly that the crews may afford mutual relief and protection, but chiefly to join in dragging the net fastened to their boats. In the shallows of rivers, rows of heavy poles are driven down, and nets secured to them, which are examined and changed at every tide. Those who attend these *stake-nets*, moreover, attach to their boats scoops or *drag-nets*, so loaded that they will sink and gather the sole, ray, and other fish feeding near the bottom. *Lifting nets*, 20 feet square, are suspended from poles elevated and depressed by a hawser worked by a windlass on shore; the nets are baited with the whites of eggs spread on the meshes. *Cormorants* are trained in great numbers in the eastern provinces to capture fish, and are sometimes under such good order that they will disperse at a given signal, and return with their prey without the precaution of a neck-ring. A single boatman can easily oversee twelve or fifteen of these birds; and although hundreds may be out upon the water, each one knows its own master. If one seize a fish too heavy for it alone, another comes to his assistance, and the two carry it aboard. The birds themselves are fed on bean-curd, and eels or fish. They lay eggs when three years old, which are often hatched under barnyard hens, and the chickens fed with eels' blood and hash. They do not fish during the summer months. The price of a pair varies from five to eight dollars. Shell-fish and molluscs, both fresh and salt, are abundant in the Chinese market. Mussels are caught in small cylindrical *basket traps*, attached to a single rope, and floated with the tide near the bottom. Oysters of a good quality are common along the coast; and a species of Mactra, or sand clam, is fished up near Macao. The Pearl River affords two or three fresh-water shell-fish, of the genus Mytilus, which are obtained by dredging. The prawns, shrimps, crabs, crawfish, and other kinds of crustacea met with are not less abundant than palatable; one species of crawfish, as large, but not taking the place of the lobster, called lang hai or dragon crab, cuttle-fish of three or four kinds, and the large king crab (Polyphemus), are all eaten by the Chinese, though not relished by others. On the Chinese coast, several species of Serranus (as Plectropoma susuki, Serranus shihpan, etc.), generally called shippan by the natives and garoupa by foreigners, are common about Macao, and considered the most delicate-flavoured of any in the markets. Another common and delicious fish is the Polynemus tetradactylus or bynni carp, usually called salmon by foreigners, and isinglass is prepared from its skin. The pomfret or stan-gyu of the Chinese

(Stromateus argenteus) is a good pan fish, but not so delicate as the sole fish, many species of which abound in the shallows of the Bogue. Two or three species of mackerel, the Sciæna lucida, an Ophiocephalus, the mullet, the white rice fish, and a kind of shad, complete the list of good table fish found in the markets of Canton.

The Chinese fish-catcher is to be seen, perfectly naked, half-walking, half-swimming. His feet warn him that a fish is at hand, and they feel for it amongst the mud at the bottom of the pond. The next moment the fisherman is under water, and he remains so long that you think something has happened to him. A few seconds more and he appears, rubbing his face and eyes with one hand, and in the other triumphantly holding up the fish which he has just captured. It is immediately placed safely in his basket, and the work goes on as before. The surface of the water is struck and splashed, in order to frighten the fish which are swimming amongst the feet of the Chinamen. Being frightened, they dive immediately to the bottom amongst the mud, where they are felt by the feet, and soon taken by these expert divers.

Fishing boats of China are under strict regulations, and all are licensed. Casting-nets are used by the poorer class of fishermen. They also use a *dip-net*. Anchoring the boat, the net is lowered, and the fisherman has large cork balls, to each of which several baits are attached. These are thrown beyond the net, and as they float towards the boat are followed by multitudes of fish, and the net is raised to capture them. They use, also, drag-nets between two ships. A small boat, painted white, is kept with its gunwale low in the water of the Canton river, into which the fishes leap on being disturbed. The night fishing of the Chinese is carried on in long narrow boats called pa-pak-teng. On one side there is a long white board, a foot broad, running fore and aft, and inclining towards the water. Amidships, a stone, which is made fast to the boat by means of a cord, is lowered into the water, the boat is paddled by a man in the stern, and the stone in the water causes a rushing noise which alarms the fish, and, seeing the reflection on the white board, they jump towards it, and nine times out of ten overleap it and fall into the boat.

Large quantities of fish are reared artificially in China, at Tai-shek, Lee-chun, Sai-chu-shan, Kow-hong, Kum-chok, and other places. In March and April the spring tides bring great quantities of fish up the rivers. The spawners deposit their ova among the long grasses or reeds growing on the banks, and in a few days the fish are hatched, are captured by nets, and placed in well-boats, where they are fed with paste made of wheaten flour, bean flour, and the yolks of eggs. When they grow large they are placed in artificial ponds of shallow water, with rockeries and the banana and vine trellis work, the foo-lin tree and water-lilies, for shade and shelter. Sometimes stone walls enclose the ponds on all but the north side, which is left open. Pigeons are not kept where fish are thus reared, and the willow tree is not cultivated. The fish are fed with grass twice daily during summer. The Bulletin Universal for 1839 mentions that in some parts of China the spawn so taken is carefully placed in an empty egg-shell, and the hole closed; the egg is then replaced in the nest, and, after the hen has sat a few days upon it, reopened, and the spawn placed in vessels of water warmed by the sun, where it soon hatches.

Of other two productions of the eastern seas, naked cephalopods are not only eaten fresh by the Chinese, but one species, a loligo, forms in its dried state a considerable article of traffic. The preparation consists in removing the ink-bag without laying open the mantle. After all impurities have been removed by water, the mollusc is submitted to a slight pressure, and ultimately exposed to the sun. Small bundles of one catty weight are tied up with slips of rattan, and enclosed in cases holding ten catties and upwards. The pikul sells at the rate of 14 to 16 Spanish dollars. Chinese fishermen, when they take one of those huge rhizostoma which abound on the coast, rub the animal with pulverized alum to give a degree of coherence to the gelatinous mass.

Fish Manure.—The smallest fishes and all offal are employed in the spice plantations by the Chinese gardeners and agriculturists of Penang, who consider the fluid in which fishes have been salted very useful manure in cocoanut plantations.

In *Borneo*, in the enclosures of stakes, drag-nets, casting-nets, traps, placed so as to swing to each tide, and hook and line are largely used; prawns, sürimps, and small fish are taken with hand-nets in the fine season. The quantity of fish taken by these various contrivances is enormous. They are salted and dried, and sent into the interior of the country. The river fish in general are not so much esteemed as those taken at sea, though they also are frequently caught, principally by means of hooks and lines attached to the light wood called plye, cut into the shape of birds. These may frequently be seen floating down with the tide, to each of which is attached at the neck a strong line supporting a baited hook. The proprietor is generally not far off, and on the float bobbing under water soon seizes it. A fine fish, called in Borneo, Ikan malang, is the one most frequently caught in this manner. Several light, porous woods, such as Gyrocarpus Jacquini, Salmalia Malabarica, and the fruit of the baobab, are used as floats for fishing-nets.

In *Formosa* fishermen use a sunken dip-net, into which surrounding boats drive the fish by beating the water with long poles. Where dip-nets are used, live fish are held by cords to serve as decoys.

High Asia.—No trout or salmon inhabit any of the rivers that debouch into the Indian Ocean. This widely-distributed natural order of fish (Salmonidæ) is, however, found in the Oxus, and in all the rivers of Central Asia that flow north and west; and the Salmo orientalis, *M'Celland* (Calcutta Jour. Nat. Hist. iii. p. 283), was caught by Mr. Griffith (Journals, p. 403) in the Bamian river north of the Hindu Kush, which flows into the Oxus, whose waters are separated by one narrow mountain ridge from those of the feeders of the Indus. The Central Himalayan rivers often rise in Tibet from lakes full of fish, but have none (at least during the rains) in that rapid part of their course from 10,000 to 14,000 feet of elevation; below that, fish abound, but, it is believed, invariably of different species from those found at the sources of the same rivers. The nature of the tropical ocean into which all the Himalayan rivers

debouch, is no doubt the proximate cause of the absence of Salmonidæ. Sir John Richardson (Fishes of China Seas, etc., in Brit. Ass. Rep. etc.) says that no species of the order has been found in the Chinese or Eastern Asiatic seas.

Raw dried split fish are abundantly cured (without salt) in Tibet; they are caught in the Yaru and great lakes of Ramchoo, Dobtah, and Yarbru, and are chiefly carp and allied fish, which attain a large size.—*Low's Sarawak; Cal. Journ. Nat. Hist.; Crawfurd; Dr. Buist in Bombay Times; Sir J. Richardson in Rep. B. Ass.; Williams' Middle Kingdom; Hooker's Him. Journ.; Fortune's Residence; Fortune's Wanderings; Dr. F. Day in M. Med. Journ., On the Migratory Fishes of Asia, On the Obliquity of the Eyes in Flat Fishes, On the Colours of Fishes, On Indian Fresh-water Fishes, On the Sea and on the Fresh-water Fishes and Fisheries of India; Gray's Chin.; Montgomery; Cantor; Beng. As. S. J.*

FISHERMEN. On all the sea-coasts of the south and east of Asia, and on the great rivers, the people are fishers. There is something remarkable in the circumstance of the fisher races being amongst the earliest and most eager converts to Christianity in India, so much so as to render it questionable whether it be only an accidental coincidence, or the result of some permanent and predisposing cause. Along the coasts at Madras many became Christians early; indeed, from the southern outskirt of the town at St. Thomé to its northern village of Ennore, nearly all the fishermen are Christians of the Romish persuasion. The Koli tribe of fishers in Bombay are nearly all Christians, though they have occasionally wavered. The Parawa, or fishermen of Cape Comorin, were the earliest proselytes of St. Francis Xavier, and they have still a pride in alluding to the fact that they were the first, as they have since been the most faithful and abiding, of his converts. It was by the fishermen of Manaar that he was invited to Ceylon in 1544; and notwithstanding the martyrdom inflicted by the raja of Jaffna, and the persecution with which they were visited by the Dutch, that district and the adjacent boundary of the Wanny has to the present day been one of the strongholds of the Roman Catholics in Ceylon. It is amongst the Parawa or fisher caste of the Singhalese that the Roman Catholics have at all times been most successful in their efforts to Christianize.

The Zamorin, in 1513, sent a deputation to Portugal, and his ambassador, who turned Christian, was knighted under the name of 'John of the Cross' by John III. On his return to India, he was banished from the Zamorin's court as a renegade. In 1532 he joined the fishermen, and headed a deputation of 85 of them to Cochin, soliciting the assistance of the Portuguese against the Mahomedans. The whole of the embassy are said to have become converts to Christianity. A Portuguese fleet was sent to their relief, and 20,000 are reported to have immediately consented to be baptized. Ten years subsequently, Xavier instituted a church for these people.

The fishermen race along the Bombay coasts are divided into four great castes, — Wayttree, Son-koli, Dongur-koli, Thankur-koli, over each of which a headman or jemadar presides. One great jemadar or chief rules supreme in the craft over all these fisher castes.

The sea fishermen in most parts of the coasts of India assert that in olden times they were divided into those who captured fish in the deep sea, and others who fished from the shore and in the backwaters and creeks; but in several parts of India, more especially in the Madras Presidency, they have customs of a patriarchal nature, but which are more strictly observed on the Coromandel than on the western coast. In Sind there are four divisions of the fishermen caste, each being under its own chief, who is hereditary, and his business is to settle caste disputes and other trifling matters, also to conduct the religious ceremonies connected with marriages and deaths. In the Bombay and Madras Presidencies headmen to the fishing castes likewise exist; in some localities they are hereditary, in others elective; or should there be no headman, matters are laid before certain wealthy individuals of their own caste, whose decision is final. In places where the fishermen are Christians, the priest appears to be appealed to in order to settle disputes.

Among the fishermen of the Peninsula there exist priestly chiefs, two of whom are to be found on the eastern coast, one at Madras, and the other at Cuddalore, the territory of the former stretching up the Coromandel coast, while that of the latter reaches towards Cape Comorin. A third is found in South Canara, where he exercises spiritual control over a large district. These chiefs' offices are hereditary; they receive fees and fines from those of their caste living within their jurisdiction, and they are the final referees in all cases of caste or family disputes. A class of more petty chiefs or hereditary headmen only hold sway each over a few villages; their duties are the same, and some of their fees seem to have to be transmitted to their superior. On one of these headmen dying without heirs, a new one is elected by the people of the caste. Lastly, the fishermen have the elective headman, who is chosen by the residents of a single hamlet; his duties are to decide disputes, to be present at marriages and religious ceremonies, often to fix the work and assist in certain Government duties; his emoluments appear to be very trifling.

Along the western coast of the Madras Presidency, with its untaxed salt earth, these people prosper; but all up the Coromandel coast, except where there are large towns, we find them reported to be decreasing in numbers, due to cholera or other diseases, emigration, or accepting service as lascars in coasting vessels.

The fishermen in Sind, in 1875, paid a tax of 10s. a ton yearly on their fishing boats. These people are well off. In Gujerat the fishermen are poor, and the precarious living they make often induces them to accept service as sailors, labourers, or anything that ensures them a steady competence. They are in the utmost misery, not due to their own laziness, but as a result of British legislation imposing prohibitory duties on salt, and causing an enormous loss of food to the inhabitants at large. In the Janjira district the fishermen supply themselves with boats and nets; six or ten club together to obtain a boat and net, dividing the produce; here they have decreased in numbers. At Broach and Kaira they have diminished. In Ratnagherry they are said to have increased.

In the Tinnevelly collectorate the fishermen as

a rule are very poor. They work by a system of advances made by traders, a few of whom reside in each fishing village, and supply all the requisites for fishing, as well as the boats, taking one-third of the captures as their share. In the Nellore district the inhabitants of the different villages prevent fishermen from other localities plying their occupation within what they believe to be their limits. At Cannanore the owners of fishing boats and nets supply them to the fishers. A like plan obtains at Tellicherry, where the fishermen have framed rules for their own guidance, one of which is the right of the first discoverer, among a lot fishing together, to a shoal of fish; he is allowed to capture them without hindrance from the others, even though at the time when the fish were discovered he was not prepared to launch his net. At Ootipadaram the native official estimated the daily earnings at threepence, taking all the year round, and excluding costs; and at Munjery at from three-halfpence to ninepence; while at Tenkarei their earnings were computed at from threepence to one shilling a day.

Without tracing out the condition of these people in each district on the coast, it will be sufficient to say that they are poor and miserable, but not so badly off as in the Bengal maritime districts, where they appear to be quite poverty-stricken.

The chief cause of this impoverished state is undoubtedly the hampering in their avocation, occasioned by the salt monopoly, which restricts their traffic to the sale of fresh fish, sufficient merely for local consumption. In India, also, on the sea-coast, it is aggravated by the caste customs preventing the fishing races taking to other avocations. Passing on to Burma with its cheap salt and freedom from caste, we find the fishermen well off.—*Tennant's Christianity in Ceylon; Day's Fisheries; Bombay Times*, 1850.

FISH HOOKS.

Hameçons, ... Fr.	Panching, . . . Malay.
Fischangeln, . . . Ger.	Galamu, ... Tel.
Gal, ... Hind.	Anzuelo, ... Sp.
Kail, Kai, . . . Malay.	

Fish hooks are used in all countries, but in the S. and E. of Asia, nets, traps, and stakes are the generally adopted modes for catching fish.

FISH INSECTS are species of Lepisma, pretty little silvery creatures, found in brooks. L. niveo-fasciata, *Templeton*, and L. niger, *Templeton*, occur in Ceylon and Malabar. The genus was called Lepisma by Fabricus, from its fish-like scales. It has six legs, filiform antennæ, and the abdomen terminated by three elongated setæ, two of which are placed nearly at right angles to the central one. Linnæus states that the European species was brought in sugar ships from America. The chelifer found in Ceylon has been brought thither from Europe.—*Tenn. Sk. Nat. Hist. of Ceyl.* p. 476.

FISH MAWS, Fish Sounds, Air-bladder, Swim.

Singally, Sosilly, . Beng.	Sosili (small), Guj., Hind.
Loo-pa loo-pa, . . Chin.	Palogpong ikan, . Malay.
Poota (large), Guj., Hind.	Ari, Ari ikan, . . ,,

Are terms applied in oriental commerce to the air-bladder, sound, or swim of fishes. It is an article of luxury with the Chinese, and forms an important article of export from all the S.E. coasts of Asia. Small quantities of the superior kind are occasionally sent to England, from which it is supposed isinglass is made. There are two kinds of fish maws in Bombay, the poota and sozili, the difference consisting merely in the size,—the latter being about one-fourth the size of the former. They are of yellowish tinge, and are cured by stretching them in the sun. If they become damp, they soon decay and are then worthless. They are brought to China in junks from the Indian islands. At Singapore and in China the price is from 35 to 70 dols. per pikul, and, together with birds' nests, beche-de-mer, and sharks' fins, are consumed by the Chinese for their supposed strengthening and restorative properties. That the fish maws are isinglass, appears to have been the discovery of an anonymous correspondent in Parbury's Oriental Herald for January 1839. The fishes from which isinglass is obtained at Penang are,—Lates heptadactylus, Ikan siyakup; Polynemus Indicus, Ikan kurow; Otolithus biauritus, Ikan salampae; O. ruber, O. argenteus, O. maculatus, all called Jarang gigi; Johnius diacanthus, Ikan tambareh; Lobotes erate, Ikan batu; Arius truncatus, A. arius, A. militaris, all called Ikan saludu. Their export from British India, from 1857-58 to 1860-61, ranged up to 1,002,624, value Rs. 99,620; and in recent years was:—

	Lbs.	Rs.		Lbs.	Rs.
1875-76,	876,624	2,51,603	1878-79,	1,238,728	3,75,569
1876-77,	966,658	3,40,792	1879-80,	1,145,968	3,60,020
1877-78.	1,082,681	3,86,490			

The air-bladders of fishes that swim near the surface are small, and are wholly absent in those which, like the flat fishes (Pleuronectidæ), live near the bottom.

FISH OIL manufacture is carried on all along the western coast of India. The great source of supply is the shark and the skate. The livers of these are cut out, and thrown into a vat or old canoe or other receptacle, and trodden on with the feet till the oil is expressed. It is then drawn off, and stowed away. The oil from the variety of skate called Wagli by the natives of the Bombay coast, seems to have a strong resemblance to cod-liver oil. On the Malabar coast, especially off Vingorla, the seas literally swarm with a variety of the sardine; a coarse, ill-smelling kind of oil, which sells for from six to twelve annas a maund, is manufactured from these. The natives employ it for smearing their boats. The liver of the white shark is that generally used. The mode of preparing the best cod-liver oil is equally applicable to fish liver. The proper season for preparing cod-liver oil is early in January, when the livers are plump, firm, large, white, and full of oil. The livers are sometimes found diseased, and such as are specifically lighter than water should be rejected. Good livers should cut smooth, and not tear; when cut, none of the substance should flow out in a half-liquid state. The quantity of oil produced by livers depends much upon the time of the year. In the beginning of January 1000 livers were found by experiment to yield 37 imperial gallons, and at the end of February an equal number only gave 23 gallons of oil. In the beginning of January 1000 livers of average size weighed 900 lbs., whilst in the last day of March the same number weighed only 575 lbs. The oil at these different seasons was equally pale, and the livers equally white, although much smaller and more flabby in the latter season. To prepare the oil, wash the livers very carefully,

first removing the gall-bladders which adhere to them, and infuse them in rain or other water free from salt. Place them over the fire, and never allow the heat to exceed 120° or 130°. On this head especial care must be taken; a higher degree of heat, although yielding a larger product, communicates a rank, fishy taste and smell, and heightens the colour of the oil, thereby rendering it disgusting to the patient.—*M. E. J. R. of* 1855.

FISH ROE.

Matchi ke unde, . DUKH. | Chapa janna, . . TEL.
Min chenney, . . TAM. | Trubu, . . . MALAY.

Fish roe is sold in every bazar of the S. and E. of Asia, and the fish roe of Siam is a great article of trade.

Fish Roes, *Red Fish*, and *Sardines* are Malay condiments, and the species of fish used in their preparation are Alausa toli (Ikan truboh), Engraulis Brownii (Bunga ayer or badah), Dussumieria acuta (Tamban-bulat), and Clupeonia perforata (Tamban-nepes or batuh). *Balachan* or gna-pi is a condiment prepared from small fishes of all descriptions, and shell-fish. The ingredients are placed in a pit to undergo fermentation, and afterwards dried, pounded, and preserved with spices. With the Malays, Siamese, Burmese, and Cochin-Chinese, balachan has become a necessary of life, as it serves to season the daily food of these nations.

FISH SKINS, Piel de pescado, SP., are used occasionally in India for covering scabbards. The Goldi, on taking a large fish, remove the skin and beat it with a mallet to remove the scales and until the thick, oily corium becomes supple. In a dress of this kind they defy snow, mist, and rain.—*Latham's Nationalities of Europe*, i. p. 271.

FITCH. Ralph Fitch, a London merchant, travelled through India and Burma about 1583-91, in the reign of Queen Elizabeth, along with another London merchant named Newberry, and accompanied by a jeweller named Leedes and an artist named Storie or Storey, all at the charge of Sir Edward Osborne and Mr. Richard Staper, two rich London citizens. They travelled through Syria to the Persian Gulf, and there the Portuguese imprisoned and sent them to Goa as interlopers. Storie adopted the Romish faith, and settled at Goa, marrying a half-caste; but the others were ultimately released, and travelled to Golconda, and through Berar and Rajputana to Agra, where Akbar was ruling. Thence Newberry returned, *via* Lahore, Afghanistan, and Persia, to England. Leedes appears to have settled at Agra in Akbar's service, and Fitch sailed in a fleet of 31 boats down the Jumna and Ganges, passing Allahabad, Benares, Patna, and Gour, to the Bay of Bengal, visiting also Koch-Bahar, thence to Orissa, and finally, in November 1586, to Burma, in a small Portuguese vessel. He returned to England in April 1591. With the extensive information regarding the wealth of the countries they had visited, the general current of enterprise ran so vehemently towards India, that in 1589 some London merchants applied to their Government for the royal permission to send three ships and the same number of pinnaces on a voyage to that country. This was granted towards the end of 1600, and they formed amongst themselves a chartered association, under the style and title of the Governor and Company of Merchants trading to the East Indies, which was the origin of the East India Company. Their first factories were formed at Surat, Ahmadabad, Cambay, and Gogo.—*Fytche's Burmah.*

FITZCLARENCE, LIEUT.-COLONEL, author of Journal of a Route across India through Egypt to England, in 1817 and 1818, 4to, London 1819.

FITZGERALD, CAPTAIN, with three troops of Bengal cavalry, successfully charged the Mahrattas at the battle of Kamptee in 1817 against Apa Sahib. He had been ordered not to advance against the enemy, but, seeing his small party being hemmed in, he sent asking permission, but was forbidden to charge at the peril of his commission. 'By heaven, we'll charge him!' he exclaimed. The Hindu troopers, taking a handful of earth from their syces, threw it over their heads, the Mahomedan troopers shouted their usual war-cry, 'Deen! Deen!' For the faith! For the faith! and, spurring on, they captured two guns, which they turned on the enemy and mowed them down in heaps. This successful charge turned the tide of battle.

FIUMARA. IT. In Italy, a hill watercourse, which rolls a torrent after rain, and is either partially or wholly dry during the drought season. It corresponds to the Indian nullah.—*Burt., Mecca.*

FIVE, Panch, HIND., is a number of frequent occurrence amongst Hindus. Panch-salar or Kansali, the five artisans; Pancha-janya and Pancha-kshiti in the Veda, five families, according to Lassen; Panchayat, a jury of five. The punch liquor and Punch of Punch and Judy are said to be from Panch, five. The five items of punch were arrack, sugar, water, rose-water, and limes; the five of Punch and Judy are Punch, Judy, the dog, the constable, and the devil. The English word five comes from the Greek πέντε, Panjah, the upraised hand. Ten is one upraised hand and one reversed, and, with digits prefixed or suffixed, up to 49 are indicated. The almanacs of the Hindus include Panch-anga, five sections, viz. the lunar day, the solar day, the lunar asterism, the conjunctions and transits of the planets, eclipses and the karana or subdivisions of the lunar day. Five mountains are sacred to the Jains, viz. Abu, Girnar, Palitana, and Tallija in Saurashtra, and Sakur in the east.

FLACOURTIACEÆ, a natural order of plants. 18 species of the genera Flacourtia and Phoberos occur in the S. and E. of Asia. F. obcordata is a shrub of Chittagong and Sylhet, F. rotundifolia of the Peninsula, and F. Campbelliana of Sumatra.

FLACOURTIA CATAPHRACTA. *Roxb.*

Taliputri, . . . HIND. | Talishapatri, . TAM., TEL.
Paniala, Panijala, . ,, |

A tree of Assam, Monghir, and Nepal, grown as a fruit-tree in gardens at Kotah, and affords a popular medicine in Behar. The small leaves and shoots resemble rhubarb in flavour, and are used as a gentle astringent in the dose of half a drachm in powder. An infusion of the bark in cold water is also employed as a remedy in hoarseness. The young shoots and leaves are considered astringent and stomachic. The berries are edible.—*Roxb.*

FLACOURTIA INERMIS. *Roxb.* Lovi lovi, SINGH. Grows in Ceylon, in both the Peninsulas of India, in Sylhet, and in the Moluccas. It has minute greenish flowers. In the Moluccas it is extensively cultivated for the sake of its fruit, which makes excellent tarts, though too sour to be eaten raw.—*Roxb.; Voigt.*

FLACOURTIA MONTANA. *Graham.* Ram tambut, Uttuck, MAHR. A tree common in forests above and below the Bombay Ghats, but does not extend inland. The wood is rather strong and close-grained, but the girth is never such as to render it sufficient for general purposes of carpentry or building.—*Dr. Gibson.*

FLACOURTIA SAPIDA. *Roxb.*

F. Ramontchi. *L'H.*

Bodinch, ... BENG.	Oogoorassa, . . . SINGH.
Bowchee of . . BOMBAY.	Swadoo kuntuka, . SANSK.
Bincha, ... DUKH.	Pedda kanaregu, . . TEL.
Kuke, ... HIND.	Pedda canrew, . . ,,
Kangu of . . . RAVI.	Nakka neredu, . . ,,

A small-sized tree or large shrub, growing to an elevation of 1500 to 3000 feet in the central province of Ceylon, also in Peninsular India, and on the Godavery, in Ganjam and Gumsur, also in Bengal and northwards to Dehra Doon. It yields a very hard, close-grained wood, which does not warp, and is worthy of attention. This wood is burned by Hindus when libations are offered for a person who has died on an inauspicious day. It is found as a large shrub along the lower hills of the N.W. Himalaya, sometimes to 3500 feet, in the Salt Range, and on the skirts of the Suliman Range, etc. The timber is there occasionally employed for ploughs, but is too small for most purposes. The fruit about Calcutta grows to the size of a common plum; it resembles a gooseberry, the skin thin and shining, and of a purple appearance. It contains from 10 to 12 seeds, is both palatable and wholesome, and well worthy of more general cultivation.

FLACOURTIA SEPIARIA. *Roxb.*

Juthe karande, . DUKH.	Canrew, Sottakla, TAM.
Khutai, Dajkar, . HIND.	Sambla, ... SANSK.
Sherawani, Yargal, . IT.	Kanarogu, ... TEL.
Kuru moolli, . MALEAL.	

This shrub grows in Ceylon and all over India, up to the Salt and Suliman Ranges. It has strong spines, preventing cattle browsing the leaves. Its fruit is small, hard, and insipid.—*Thw.; Stewart.*

FLAGELLARIA INDICA. *Roxb.*

Bun-chunda, . . BENG.	Har charrul, . . HIND.
Myouk kyeing, . BURM.	Poindee pootee, . . TEL.
Panambu-valli, . . CAN.	

A long, straggling, scandent perennial plant, a native of forests; flowers during the beginning of the rains in June. Is easily recognised by the tendril it puts forth at the end of its leaves.—*Mason; Roxb. Fl. Ind.* ii. p. 154.

FLAME OF THE FOREST is Ixora coccinea, *Linn.* Flame tree or fire tree of Australia, King George's Sound, is the Nuytsia floribunda. The flame tree of Illawarra in Australia is the Brachychiton acerifolium, which grows to 60 or 70 feet, and has large racemes of bright red-coloured flowers. Its wood is soft and spongy, and its bark is made into nets and fishing lines.—*G. Bennett*, p. 354.

FLAMINGO, or Raj-hans, the Phœnicopterus roseus of Pallas, a splendid bird, found in most parts of India. The Singhalese have been led, from their colour and their military order, to designate them the English soldier birds.

FLANNEL. Looi, HIND. This woollen article is wholly imported into India; there is no similar woollen stuff manufactured in S. and E. of Asia, the nearest fabric being the Rampur chadr. It is not much used by Asiatics.

FLATA LIMBATA. *Hutton.* An insect of the Himalaya, closely related to the Psecloptera. Captain Hutton says it produces a wax said to dissolve readily in water. In the attempt to melt it on the fire without water or oil, the wax merely burned and consumed away, till it became converted into a hard and baked substance.—*Science Papers*, p. 62; *Nature*, 5th Sept. 1878.

FLAX.

Muahina, ... BENG.	Lino, ... IT., SP.
Llin, ... CYMRIC.	Linum, ... LAT.
Vlasch, ... DUT.	Atish; Tisi; Alisi, PANJ.
Lin, . ANGLO-SAXON, FR.	Kutan, ... PERS.
Flachs, ... GER.	Len, . . . POL., RUS.
Lein, ... GOTH.	Linho, ... PORT.
Linou, ... GR.	Lon, ... RUS.
Pishtah, ... HEB.	Atasi, ... SANSK.
Alsi; Atia, . . . HIND.	Lint, ... SCOTCH.

The flax plant, Linum usitatissimum, is grown in India for the seed and for a little fibre; except in a few localities, it may be said to be not raised in any part of India for external commerce. This seems a change from the former state of agriculture, for flax is mentioned by Strabo as one of the staples of the N.W. part of India. Linen cloth was used to envelope the dead by the ancient Egyptians, among whom flax was cultivated from remote antiquity. It was grown also by the Jews, who obtained it from Egypt. The Northern Provinces of India have been producing for years past enormous quantities of linseed, which is shipped to the United Kingdom, and to the United States of America. The quantity annually exported does not fall short of two million quarters. The stalk or straw of all this seed is veritable flax, yet no commercial use is made of it. Attempts have been made more than once to prepare the flax of British India for manufacture, but without success.

Great Britain, in the years 1877-1879, was receiving annually about 110,000 tons of flax, valued about £4,000,000, two-thirds of it coming from Russia, dressed, undressed, and as tow or codilla; and in 1870, 1¼ million quarters of seed were imported.

A small quantity of Riga seeds, which had been imported experimentally by Dr. Jameson, was distributed amongst the peasants, with instructions as to the mode of cultivation. An agent of great practical experience was deputed to examine and report upon the qualifications of different districts for the growth of flax, and a staff of natives were trained by him to act as scutchers. In 1856, two tons of flax, produced under his superintendence in the district of Goojranwalla, were sent to England, and were sold for £92, 2s. 2d., realizing a net profit of 47 per cent. In 1857, 8 cwt. of flax, grown at Jeddura, a tract of country in the Kangra district, bordering on the river Beas, were sent to Britain, and were valued at from £55 to £60 a ton. In consequence of the success of these experiments, an association, called the Indian Flax Company, was established in Belfast, and an agent was sent out to buy up flax produce. In 1863 he made the district of Sealkote his headquarters, but, owing to various circumstances, their operations were brought to a close. Up to this, flax had always been sown in the Panjab as a field crop, but raised only for its oil-seed, and as the plants are only 18 to 24 inches high, they are useless for textile purposes. Flax is prepared by steeping the plant, stripping off the bark, and

then beating so as to separate the fibres, from which linen and cambric are prepared,—cambric differing from linen in fineness, and in being made from the fibre of plants which have been more thickly sown. Linen cloth is a good conductor of heat, and is cool, but is chilly when the body is exposed to cold or is perspiring.

The Burmese are acquainted with linen from their books, in which it is frequently mentioned. The lake or tank near king Wathandria's hermitage is described as being covered with water-lilies, that appear like garments made of thread of flax bark; and linen garments are mentioned among those which priests are permitted to wear.

Flax Manufactures, comprising twist and yarn, piece-goods, sewing thread, canvas, bags, sacs, etc., were imported into India in the years 1874-5 to 1879-80, of annual value up to 12 and 13 lakhs of rupees, the highest value of the canvas being Rs. 7,94,978, and that of the piece-goods Rs. 4,96,546.

Flax Seed, linseed.

Hu-ma-tsze,	CHIN.	Sieme, Iniane,	POL.
Lynzaad,	DUT.	Linhaca,	PORT.
Graine de lin,	FR.	Semja lenja,	RUS.
Lein saat,	GER.	Linaza,	SP.
Linseme,	IT.		

The seed is in India produced for its oil, and is largely exported.—*Stewart; Powell; M'Culloch; Royle.* See Linseed.

FLEA.

Paros,	HEB.	Ec,	TAM.
Pisu,	HIND.	Egalu,	TEL.
Pulex hominis,	LAT.		

This insect, which was one of the plagues that fell on Egypt, is very common in all the S.E. of Asia, and at certain seasons in some parts of the Peninsula they occur in great numbers. The natives of India say they breed in the rocky ground. At Ahmadnaggur, Nasik, Secunderabad, and Bangalore, in some years they are innumerable, but their bite is insignificant.

FLEABANE, PURPLE.

Kali-siri,	DUKH., GUJ.	Caattu siragam,	TAM.
Buckshi,	HIND.	Adivi jilakara,	TEL.
Kana-iraka,	SANSK.		

A small dark-coloured and extremely bitter seed, procurable in all Indian bazars, considered powerfully anthelmintic, and also used as an ingredient of a compound powder prescribed in snake-bites by native practitioners. An infusion of seed is also given for coughs, and against flatulency. The Inula pulicaria, or fleabane, a common roadside plant in Britain, strewed or burned in any place, destroys gnats and fleas, and the same properties are attributed to the common oxeye daisy of Britain. Flies, fleas, and mosquitoes avoid rooms in which branches of pennyroyal have been suspended. Vernonia cinerea, *Less.*, is the ash-coloured fleabane.—*Ainslie.*

FLESH-EATING PLANTS. The insectivorous plants described are the common sun-dew (Drosera rotundifolia), the Venus fly-trap (Dionæa muscipula), an aquatic plant growing in Queensland, and known as the Aldrovanda vesiculosa, which feeds upon water beetles; the Drosophyllum Lusitanicum, which the villagers in some parts of Portugal hang up in their cottages as a living fly-catcher; the Pinguicula vulgaris, which flourishes in North Wales, and several varieties of the Utricularia; the Saracenia purpurea, and the Darlingtonia of N. America.

FLINDERSIA AUSTRALIS. This tree is a native of Australia, and its wood is said to be not inferior to mahogany. F. Amboinensis is a native of the islands of Hitu and Ceram. The spiny part of the fruit is formed into rasps. It was on this account called by Rumphius, Arbor radulifera.

FLINT.

Ho-shih,	CHIN.	Selice,	IT.
Pierre à fusil,	FR.	Batu-api,	MALAY.
Feuerstein,	GER.	Pedernol,	SP.
Hala-mish,	HEB.	Chakimuki,	TAM., TEL.
Chakmak,	HIND.	Chakmak-tashi,	TURK.

This mineral is composed almost entirely of silica. It is almost all imported from Britain, being exceedingly rare in India. It is used, when calcined and ground, in pottery; also for gun-flints, for which purpose the yellowish-grey flints are preferred. In India the chalcedonic quartzes are used instead of flint.—*Waterstone.*

FLOATING ISLANDS occur in the lake of Kashmir. One occurs in Lake Derwentwater in England.

FLOATS are much used for rafting timber, and they are formed of many vegetable substances. Saccharum sara reeds are much employed, also the bamboo and the fruit of the baobab.

FLOODS.

Seil,	ARAB.	Riflusso,	IT.
Inondation,	FR.	Diluvio,	SP.
Fluth,	GER.		

Of these, the traditions of nations mention several. One Hellenic tradition is known as the flood of Deucalion, son of Prometheus, who built the ark, which rested on Parnassus in Thessaly. A similar legend of Asia Minor was connected with the deluge of Iconium, and was localised at Olympus, the highest peak of Western Asia. Missionaries in China have attributed the inundations alluded to as occurring in the reign of Yu, the founder of the first Chinese dynasty, B.C. 2207, to the flood of Noah. The flood of Noah is supposed to have occurred in the year of the world 1656, that is, about B.C. 2328 or 2344. The Aryan Hindu traditions of this great flood are distinct, but involved in their mythical religion. Their Matsya or fish avatar is a history of that event disguised in oriental fiction. One account is given in the Satapatha Brahmana of the Rig Veda; another tradition is in the Mahabharata, where Brahma is the actor; a third in the Bhagavata Purana, and a fourth in the Matsya Purana, both of them indicating Vishnu. Disastrous river and sea floods are of very frequent occurrence in India and China. Even the ordinary rain floods are eminently disastrous. A correspondent of the Englishman mentions that, when returning on one occasion from Kishengarh, he found the whole country under water. He got into a fishing dingy, and was rowed straight across country, nothing to be seen out of water but the villages, which looked like islands in a sea; the very parapets of the bridges in the road under water, and but for the trees at the roadside, nothing could indicate that such a thing was there. All the crops gone.

Hebrew flood in Samaritan text,	B.C. 3044
Brahmanical flood,	3101
Chinese flood,	3082

962 A.D. At Baghdad, half the city inundated from overflow of the Euphrates.

969. At Baghdad, nearly three-fourths of the city inundated from overflow of the Euphrates.

968. Persian Gulf, severe eruption following earthquakes, several cities destroyed, and new islands formed.
1076. Baghdad overflowed by inundation of the river.
1088. Tigris again overflowed, and did much damage.
1276. Baghdad again inundated, after appearance of red flame.
1291 and 1304. Damascus inundated by overflow of streams.
1642. The city of Kai-fong besieged by rebels, and embankments destroyed and city inundated, during which 300,000 persons perished.
1763. Burhanpur overflown by the river Tapti from heavy rains, a quarter of the city inundated, and one-tenth of the houses destroyed.
1768. Heavy floods in Behar and Bengal, and in 1769 and 1770 rain scanty.
1770. Great flood in Eastern Bengal.
1773. Great destruction in Calcutta from rain and floods.
1784. Some of the N.W. Provinces suffered greatly from floods after a great drought.
1787-88. Floods in Behar and N.W. Provinces, said to have caused loss of 150,000 souls and 100,000 head of cattle. Rain of 1787 began early, and continued late, particularly in Bengal, Jessore, Nuddea, and Behar. About 1st October a tremendous storm of rain and wind swept over W. of Bengal, followed by a cyclone which moved across almost all Bengal, and the crops largely destroyed. In Rangpur, in 1787-88, the excessive rains in the Himalayas, followed by wet weather in the district, caused the Tista to overflow into the Ghaghat, and this river swept over the district; whole villages entirely disappeared, and multitudes of people and cattle perished; and on the 2d November, just as the rice was getting into ear, a cyclone with torrents of rain occurred. One-sixth of the population of Rangpur were lost, and in the Panga pargana half the population was gone. In the same year, 60,000 of the inhabitants fell victims to famine following on floods.
1800. In China, great floods.
1818, August. Floods occurred on the coast of Canara and Malabar.
1831-32. A flood occurred in the delta of the Ganges on October 8, 1831, when 50,000 lives were lost; near Balasore 17,474 people drowned; in 1832, 2000 in the same neighbourhood.—*As. Jl.* 1833.
1832. At Coringa a great and very destructive inundation.—*Beng. As. Soc. Journal*, 1834, xiv. p. 259.
1833, November. At Canton, excessive rain, and 10,000 houses swept away, and 18,000 persons drowned.
1837. On the Tapti at Surat, on August 6, 1837, 500 houses were said to have been destroyed, the loss estimated at betwixt 30 and 40 lakhs of rupees (£300,000 to £400,000); and a lakh and a half (£15,000) was subscribed at Bombay to supply the sufferers with grain.
1838?-39? The Ganges once rose 45 feet above the usual level; swept away Burree Bund, and laid a town four feet under water; and an account of it appeared in the Agra Ukhbar, August 30, 1839.—*As. Jl.* 1839. Inundations at Hussingabad were mentioned in As. Jl., April 1839, and a description of that at Agra in the As. Jl. 1838.
1839, December. A hurricane sea-wave, or wave caused by an earthquake, rose 8 feet above the level of Coringa village; the inundation covered 30 miles of country, and above 7000 people were drowned. £100,000 worth of property destroyed on shore; at sea 70 vessels were lost, with about 700 lives.
1841. The Indus seemed to have been for some time ponded back, when a terrific flood swept over Attock and all the country around. Dr. Falconer gave an account of it in Bl. As. Trans. 1843, x., and Dr. Jameson, ibid. xii. It occurred from the giving way of a glacier. The body of a woman dressed in sheep-skins was thrown ashore at Attock, and supposed to be a Tibetan; 10,000 lives were said to have been lost (As. Jl. 1841, xxxv. 196, 264). Captain Abbott gave an account of it from lips of natives in the Bl. As. Trans. 1841, x. p. 230. From hundreds of villages and towns, including Khyrabad and Attock, thousands of human beings and cattle were swept away. In the Hazara country, artillery guns with many hundreds of infantry and cavalry were lost; a whole camp with troops and followers was carried down the river.
1845. Great floods in China, deluging the shores of the Yellow Sea, submerging whole provinces.
1849. Dr. Buist gave an account of that of 1849 in Edin. Phil. Jl. 1851; Bl. As. Trans. 1851.
1856. Prome nearly destroyed by overflow of the Irawadi.
1866. In Puri, during the 32 years ending in 1866, there were 24 years of excessive rains, but in 1866 floods swept over nearly all the Puri districts; in one pargana more than 12 square miles of solid land were suddenly turned into a sea from 7 to 9 feet deep, and thousands of families floated about in canoes on bamboo rafts, and on trees, and many perished. In 1769-70, 1777, 1788, 1866, 1874, and 1877, there have been famines in parts of Bengal; but the famine of 1866 was felt in the Twenty-four Parganas, in Nadiya, Hugli, Dacca, and Murshidabad; and Orissa was devastated. The numbers who perished will never be accurately known. The estimate has been about one-fourth of the entire population.
1867. A great sea-wave in a cyclone broke along the coast at Masulipatam, and caused enormous loss of life and property.
1871. Near Prome great floods.
1872. In Kandesh and Nasik, great floods, attributed to the destruction of the forests.
1875. In Burma, heavier floods than in 1871.
1875. In N.W. Provinces, disastrous floods, causing loss of life and destruction of property.
1875-76. The river Tons and the Jumna rose, and the waters of the Jumna entered Allahabad. On the subsidence of the floods, it was found that 772 villages had been destroyed or damaged, 181 lives lost, 1949 head of cattle and 820 sheep and swine drowned, and the total damage estimated at nearly 14 lakhs of rupees.
1876. In northern provinces of China great floods.
1876. In October 1876, a tidal wave, consequent on a hurricane, inundated Bengal; lives lost estimated at 200,000, and great destruction of property.
1878. For four months up to March, in Ceylon, a succession of floods.

—*Edye in Loud. As. Trans.* 1835, ii. p. 342; *Dr. Buist's Catalogue.*

FLORA of the South and East of Asia has been largely described by some of the most eminent of the botanists of the world, whose names will be seen under the article Botany. But the most complete recent view given of the plants of this South-Eastern region is by Drs. (Sir) J. D. Hooker and T. Thomson in their Flora Indica. There is a striking resemblance between the vegetation of tropical Africa and tropical Asia; but India contains representatives of every natural family on the globe, a very few small American, Australian, and S. African orders being the chief exceptions. Many North African or Arabian forms, such as Peganum, Harmala, Fagonia cretica, Balanites Ægyptiaca, Acacia Arabica, Alhaji, Granges, Calotropis, and Salvadora Persica extend through the drier parts of India; and others, Cleome, Balsamodendron, Astragalus hamatus, Cucumis colocynthis, Berthelotia, Anticharis Arabica, etc., have a less extensive range. In the humid parts of tropical India, as in the impenetrable green jungles of the equable and rainy Malayan Peninsula, of Eastern Bengal, the west coast of the Madras Presidency, and of Ceylon, the flora contrast strongly with that of the drier parts of the intertropical zone, and still more so with the loosely timbered districts of Central India and of the base of the Western Himalaya. Many tropical genera and families, as most palms, Cycas, Dipterocarpeæ, except Vatica, Aurantiaceæ, Connа-

raceæ, Meliaceæ, Myrtaceæ, Rubiaceæ, Ebenaceæ, and many more, which are sensitive to cold, are comparatively local when found beyond the tropics. Many Leguminosæ (viz. Bauhinia, Acacia, Erythrina, Butea, Dalbergia, and Milletia), Bombax, Vatica, Naucles, Combretaceæ, Verbenaceæ, Lagerstræmia, Grislea, Jasmineæ, and Bignonia Indica, are indifferent to the cold of winter provided they experience a great summer heat; and they advance far beyond the tropics, and lend a more or less tropical aspect to the flora even of the base of the North-Western Himalaya, in lat. 35° N. On the other hand, the perennially humid forests are uniformly characterized by the prevalence of ferns; and at elevations below 5000 to 7000 feet, by the immense number of epiphytal Orchideæ, Orontiaceæ, and Scitamineæ. They contain a far greater amount of species than the drier forests, and are further characterized by Zingiberaceæ, Xyrideæ, palms, Pandaneæ, Dracæna, Piper, Chloranthus, Urticaceæ, especially Artocarpeæ, and Fici, Araliaceæ, Apocyneæ, shrubby Rubiaceæ, Aurantaceæ, Garciniaceæ, Anonaceæ, nutmegs, and Dipterocarpeæ. The bulk of the flora of the perennially humid regions of India, as of the whole Malayan Peninsula, the Upper Assam valley, the Khassya mountains, the forests at the base of the Himalaya from the Brahmaputra to Nepal, of the Malabar coast and of Ceylon, are of one type, which includes a very large proportion of the Indian genera.

In India the number of peculiar families largely represented in it is very limited; the Aurantiaceæ, Dipteraceæ, Balsaminæ, Ebenaceæ, Jasmineæ, and Cyrtandraceæ are the only orders which are largely developed in India, and sparingly elsewhere, and of these few contain one hundred Indian species. The total number of Indian species are estimated at 12,000 to 15,000. The species are much scattered. It is believed that nowhere in India could more than 2000 flowering plants be found in a radius of ten miles; and there is in India an almost complete absence of absolutely local plants. The plains of India are everywhere poor in species; and such as abound in individuals are usually of a weedy character. Indeed, there are few other countries in which the vegetation of the more accessible parts presents so little beauty or such short seasons of bloom. The great number of 222 British plants extend into India. Many North African and Arabian forms occur. Several Australian species are found in the Malayan Peninsula. Many of the Himalaya, Neilgherries, Khassya, and Ceylon species are found in the Malay Peninsula and in Java. Gaultheria nummularia extends from the N.W. Himalaya to the Java mountains; and common to India and Java are Sedgwickia cerasifolia, *Griff.*, Marlea, Cardiopteris lobata, several oaks and chestnuts, Antidesmeæ, a willow, and Myrica. The Chinese type is abundant in the temperate region of the Himalaya, and plants of N. America west of the Rocky Mountains also occur. An immense proportion of annual plants, which vegetate during the last rainy seasons in the plains and ascend the lofty mountains, are uniformly distributed throughout India. Of these the most conspicuous are Gramineæ, Cyperaceæ, a vast number of small Leguminosæ and Scrophularineæ, Compositæ, some Labiatæ, Amaranthaceæ, Convolvulaceæ, and Acanthaceæ.

Belts of Vegetation.—The flora of the Himalaya mountains, including that of the most northern parts of China, shows an almost complete identity with the genera found covering the elevated belt of the Himalaya. If we commence with the bases of these mountains, and pass successively through the several belts, and (analogous to what takes place between the parallels of latitude of 40° to 45°) experience the rapid decrease of mean temperatures and the quick succession of vegetable productions, we first find a vegetation similar to that of the southern provinces of India. The agricultural products consist of rice, millet, amaranth, an esculent arum, ginger, turmeric, a little cotton, and sugar at the season, succeeded by wheat, barley, and buckwheat in the cold-weather months. Along with plantains, oleander, and some of the orange tribe, we meet also with some species which were long considered peculiar to China, as Marlea begonifolia and Houttuynia cordata, with species of Chloranthus, Incarvillea, and Hiptage. On ascending, we pass through different gradations of vegetation, until, reaching the regions of the oaks and rhododendrons, which is immediately succeeded by that of pines, we meet another mild region, with a flora which must approximate to that of the mountains of the central provinces of China, for here we find the Chinese genera Abelia and Eurya, with Stauntonia, Kadsura, Hovenia, etc., and it is in the midst of similar vegetation that the tea-plant is everywhere found. Dr. Royle notices the similarity of products of the Chinese tea districts and the Himalaya. He says, as the camphor, varnish, wood-oil, and tallow trees constitute a part of the natural riches of China, so we have in the Himalayas and at their foot, Camphora glandulifera, containing solid grains of camphor in its wood. Melanorrhæa usitata, *Wall.*, yields abundance of excellent varnish; besides Rhus vernicifera, the varnish tree of Japan, which is common in the Himalaya. Wood-oil is yielded by several species of Dipterocarpus; oil is obtained from apricot seeds, and from Prinsepia utilis in China, as it is in the Himalaya; and paper of the Daphne cannabina is also a product common to both, as also the butter of Bassia butyracea, which abounds at Almora.

The winter months of the colder northern countries have a corresponding cold season in India, during which ex-tropical cereals, wheat, barley, and more rarely oats, with various kinds of pulse, are cultivated; and many wild plants appear, very many Cyperaceæ, grasses, and such aquatics as Myriophyllum, Potamogeton, Vallisneria, Zannichellia, Lemna, and others. The mountainous regions of Afghanistan are rich in Himalayan forms, and contain an immense number of European and Persian plants, which find their eastern limits within the British Himalaya; and many plants are found in those mountainous regions common to Europe and the Himalaya. Nepal, Bhutan, East Tibet, and the Khassya mountains present a flora which has much in common, and in a geographico-botanical point of view is one of the most important regions in India, if not in all Asia. In the Himalaya, the genera Rhododendron, Monotropa, Pedicularis, Corydalis, Nepeta, Carex, Spiræa, Primula, Cerasus, Lonicera, Viburnum, and Saussurea attain their maximum of development. The majority of the Afghan and Tibetan plants are also on the one hand natives respectively of

the Caspian steppes and N. Persia, and of Siberia on the other.

On the Himalaya and on the isolated mountain ranges of the Peninsula of India, on the heights of Ceylon, and on the volcanic cones of Java, many plants occur, either identically the same or representing each other, and at the same time representing plants of Europe not found in the intervening hot lowlands. A list of the genera collected on the loftier peaks of Java raises a picture of a collection made on a hill in Europe. Still more striking is the fact that Southern Australian forms are clearly represented by plants growing on the summits of the mountains of Borneo. Some of these Australian forms extend along the heights of the Peninsula of Malacca, and are thinly scattered on the one hand over India, and on the other as far north as Japan. Along the Himalaya, at points 900 miles apart, glaciers have left the marks of their former low descent; and in Sikkim Dr. Hooker saw maize growing in gigantic ancient morasses. Plants on the Himalaya and Neilgherries, Ceylon, and the Khassya mountains, and in the Malay Peninsula, and the moister and more equal parts of India, are identical with those of Java. The genus Calamus, Orchids, Araceæ, Zingiberaceæ, and ferns are especially abundant; the genus Grammatophyllum, the wonderful Nepenthaceæ, or pitcher plants, of which solitary species occur in Madagascar, Ceylon, the Seychelles, Celebes, and the Moluccas. — *Powell; Darwin, Origin of Species*, 3d ed. p. 403; *Wallace*, i. p. 138; *Hook. and Thomson, Fl. Ind.*

FLORA COCHIN-CHINENSIS, a botanical work by Fra Loureiro.

FLORES, called also Endie or Mangerye, an extensive island of the Archipelago, 201 miles long from E. to W., and from 42 to 45 miles broad. Flores Head is in about lat. 8° 44′ S. and long. 122° 50′ E. It is so named from the Portuguese word Flor, a flower. Flores Island is the fifth in a line E. from Java due S. of Celebes, and of volcanic formation, and affords the first example of a race of men seemingly intermediate between the Malay and Papuan, but partaking far more of the physical form of the former than of the latter. The complexion is a good deal darker than that of the Malay, the nose flatter, the mouth wider, and the lips thicker. The hair is not lank as in the Malay, but buckles, without frizzling as in the Papuan. The stature is the same as that of the Malay, that is, short and squab. Bugis settlers in the island told Mr. Crawfurd that Flores is inhabited by six different nations, speaking as many different languages, the Ende, the Mangarai, the Kio, the Roka, the Korga, and the Galeteng,—names all derived from the principal places of their residence. The coast is occupied by the Malay or brown race; but in the interior is a people with frizzled hair, and a similar frizzled hair people live in the mountainous parts of Solor, Pintar, Lombata, and Ombay. Captain Keppel gives the following translation from a Dutch journal:—'On the island of Flores there lives a race, called on the south coast Rakka, who not only devour their enemies, but with whom custom requires that the son shall cut the body of his deceased father in pieces, and sell the flesh to the inhabitants at the high price of its weight in gold. This flesh is greedily eaten by the people as a great delicacy. If the father was heavy and of great size, the son considers himself particularly fortunate. The population of Endore, on the same island, is also very greedy of human flesh. But these cannibals confine themselves to the heart, which with incredible dexterity they extract from the body, by giving a blow under the left shoulder-blade. It is then cut into very small pieces, eaten completely raw by the bystanders who belong to the same race.' Captain Keppel adds, 'I am not able to corroborate this.' Galeteng is a locality in the island of Flores, occupied by a race so called.—*Horsburgh; Bikmore; Keppel's Ind. Arch.* ii. 149; *Crawfurd.*

FLORICANS are birds of the tribe Pressirostres, family Otididæ, bustards and floricans, which occur in many parts of India, and to the N.W. towards Afghanistan. They are, like the bustard, speckled, greyish-coloured birds; the males have plumes, and change their plumage in the breeding season. The little bustard of Europe is said once to have been called the Flanderkin, which may be the source of the name. The species are now arranged under the genus Syphcotides.

S. Bengalensis, *Gmel.*, Bengal Florikin.

Otis deliciosa, *Gray.*	O. Himalayana, *Vig.*
Charras. Charaj, or Charas, . . . HIND.	Dabar of . . . NEPAL.

In the breeding season, the whole head of the male, which is very fully crested, the neck, breast, and lower parts and thigh coverts, are of deep glossy black, the plumes of the breast elongated, forming a full breast tuft, and the feathers of the neck in front also lengthened; back a rich olive buff, with zigzag markings, and a black dash in the centre of each feather. It is 24 to 27 inches long. It is found throughout Lower Bengal, north of the Ganges, north-easterly to the foot of the Himalaya, into Dacca, Assam, Tiperah, Sylhet; north-westerly into the valley of the Jumna, Rajputana, the Cis-Sutlej States, and parts of the Panjab. It frequents large tracts of moderately high grass. The sexes live apart, but near each other.

S. auritus, *Lath.*, Lesser Florikin, Otis fulva, *Sykes.*

Khar titr of Bhils, Mhow.	Tan-mohr, . . . MAHR.
Kan-noul, . . . CAN.	Warragu Koli, . . TAM.
Charaz, Charas, . HIND.	Niala-nimili, . . TEL.
Chulla charz, Likh, ,,	

The Bhil name means grass partridge; and it gets its Tamil name from being usually found in fields of warragu (Paspalum frumentaceum). The lesser florikin, also called the common florikin and black florikin, is 19 to 21 inches long. In winter dress the male closely resembles the female, but has always some white on the shoulder of the wing; when in full breeding plumage, the male in its head, neck, ear-tufts, medial wing coverts, and all its lower plumage is deep black, the chin alone being white, the rest of the plumage fulvous. The different character of the plumage in the two seasons has led some to write on this bird under two names. It is found throughout India, from the extreme south to the foot of the Himalaya, and frequents long grass in preference to any other shelter.—*Jerd. Birds of India*, ii.

FLOUR OF WHEAT.

Fleur de farine, . . FR.	Flor de farine, . . PORT.
Feines mehl, . . GER.	Godhuma pishta, SANSK.
Semmel-mehl, . . ,,	Tringu-pittay, . SINGH.
Atta, Maida, . . HIND.	Godamba mavu, . TAM.
Tapung, Pulur, MALAY.	Godumapindi, . . TEL.
Lumat, ... ,,	

Meal of wheat flour. When sifted, maida is the finer part of wheaten flour, and soojie the coarser. In India, the unsorted wheaten flour, the atta, does not readily leaven into wheaten bread, for which the sifted soojie, the semolina of Italy, is solely used. The natives who use wheat use the atta or unsorted flour, and the maida where obtainable. The farina of wheat is used as food in British India. Rice-flour is somewhat in use; in the Archipelago that from the sago tree is very extensively consumed. There were samples of seven varieties of flour made from roots in Pasuruan, and called kiring, katella, jawi, sago, arrowroot, katella, blanda, temu-lawak, and temu-gedring, either used medicinally or as delicacies for invalids. See Bread; Farina; Food; Semolina; Soojie.

FLOWER BATTEN, a very hard, fine, close-grained, heavy Ceylon wood. Its surface shows a pleasing mottled pattern.

FLOWER DEW-WATER of the Chinese is the dew gathered at early morning from certain alliaceous plants, and especially from that of the sweet flag. The Mahomedan herbalists of India gather it from the stalks of the rice plant.

FLOWERS.

Zahrat, ... ARAB.	Fiore, ... IT.
Fleur, ... FR.	Flor, ... SP.
Blume, Kern, . . . GER.	Pu, ... TAM., TEL.
Phul, . . HIND., PERS.	Chichek, ... TURK.

Flowers are largely used by Mahomedans, Hindus, Buddhists, and the followers of Confucius in their worship of the deity, or of their idols, and in their offerings for the dead. Flowers do not seem to have been similarly employed at any time by the Hebrew race; and in Acts xiv. 13, when the priests of Jupiter came to Paul with an ox for sacrifice and with garlands, is the only mention of them that occurs. At the time of worship, the Hindu priest places a garland of flowers upon the idol. Whether Paul and Silas were to be the objects of worship, to receive the garlands, or the oxen intended to be slaughtered, in either case the practice would be conformable to that of the Hindus. There are numerous flower shops for their sale. But though so largely used in the south and east of Asia, the Aryan Hindu does not seem to care for flowers as beautiful objects of nature. He could not sing,—

'In summer, autumn, winter, or spring,
A flower to me is the loveliest thing
That hath its birth
On this chequered earth,'

though Western poets delight to dwell on the love that Eastern races have for the natural flowers. Hindu ladies sometimes wear a little mirror, called chury, of polished metal, in a ring on the thumb, and amongst Hindus the lotus is the emblem of female beauty. In a tale, it is mentioned that Krishna, who had concealed his passion from the parents of a damsel whom he secretly visited, unfortunately chanced to find her in the midst of her relations. How great her distress! He was averse to departing without expressing his passion; words were debarred, both were embarrassed, love prompted:

'He with salute of deference due
A lotos to his forehead prest;
She raised her mirror to his view,
And turned it inward to her breast.'

The flowers of the Calotropis gigantea, Jasminum sambac, Michelia champaca, Mesua ferrea, form the ornaments with which Kama, Hindu god of love, ornaments his arrows.

'He with five flowerets tips the ruthless darts,
Which through five senses pierce enraptured hearts:
Strong Chumpa, rich in odorous gold;
Warm Amer, nursed in heavenly mould;
Dry Nag-keser, in silver smiling;
Hot Kittikam, our sense beguiling;
And last, to kindle fierce the scorching flame,
Love-shaft which gods bright Vela name.'

Clitorea ternatea is sacred to Durga; Jonesia asoca is a sacred plant. The flax plant is sacred to Siva. Baka, a kidney-shaped flower, is sacred to Vishnu. The flowers of Mimusops elengi are favourites for garlands. The Chrysanthemum Indicum has a favourite garland flower. Datura fastuosa is sacred to Siva. Christians in India largely use the flowers of the Tagetes erectum on Christmas day. Hibiscus rosa-Sinensis is sacred to Kali; Jasminium pubescens is sacred to Vishnu; Nerium odorum to Siva; Nelumbium speciosum, the Indian lotus, is sacred to Brahma, Vishnu, Siva, and their consorts, Saraswati, Lakshmi, and Parvati; Nyctanthes arbor-tristis is sacred to Siva. The Buddhists make great offerings of flowers at their temples, but these are not used by the Buddhist priest for decking the person. The Mahomedans use them largely for laying over the tombs of their departed. The beautiful purple and fragrant Bignonia chelonoides is a pagoda flower; the sweet-smelling Millingtonia hortensis, the cork tree; and the Justicia picta is a shrub admired for its beautiful, variegated green and white leaves.

'Blessed be God for flowers!—
For the bright, gentle, holy thoughts that breathe
From out their odorous beauty, like a wreath
Of sunshine on life's hours.'

—*Jaffrey; Ains.; Ward's Hindoos; Hardy, Eastern Monachism; D. L. Richardson.*

FLUGGEA, a genus of plants of the natural order Euphorbiaceæ. F. leucopyrus is a small tree of many parts of India; F. retusa grows on the banks of the Jumna; and F. virosa grows on the Jumna and westward to the Siwalik Hills and the Salt Range. F. Japonica, *C. Richard*, a liliaceous plant of China and Japan; its mucilaginous tubers can be used for food.—*F. v. Mueller.*

FLUGGEA VIROSA. *R.* Phyllanthus vir., *R.*

Girk, ... HIND.	Vanuthi, . . . SUTLEJ.
Beta of SUTLEJ.	Peroi pastawane, TR.-IND.

Occurs on the Jumna, on the Siwalik, Salt Range, and Trans-Indus. The wood is close-grained and strong. Its fruit is edible by man and beast; its bark is astringent, and is used to intoxicate fish.—*Roxb.; Stewart; Voigt; O'Sh.*

FLUOR SPAR, Derbyshire Spar, Native Fluoride of Calcium, Taze-shih-ying, CHIN., occurs in the Canton and Che-kiang provinces of China. Its powder is given in sterility and lung diseases. Found in great beauty and abundance in Derbyshire and other places.—*Smith; Mason; Waterstone; Faulkner.*

FLY. In the Hebrew Scriptures are several Hebrew words which in the English version have been translated fly, viz. Oreb, Zebub, Deburrah, Tsira, Sarabim, Bak, Cinnim. The Orov or Orab, a swarm or assemblage, is translated in Psalm cv. 31 swarm of flies, but in Exodus viii. 21, also Psalm lxxviii. 45, is supposed to allude to the mosquito. The Hebrew Zenon of Ecclesiastes x. 1 and Isaiah vii. 18 is not identified. Flies are undoubtedly very troublesome in tropical Asia at some seasons, but an infusion of quassia

sweetened with sugar placed on a plate destroys them. The eye-fly, a minute insect which comes at seasons inside houses, and clusters in myriads on any hanging thread, can be destroyed instantaneously in masses, by forming a cone of paper like that for a grocery packet, and, setting fire to its edges, bringing it under the thread where they cluster; their wings are singed as they try to escape out of the burning circle. In Italy, large bundles of a common viscous plant (Erigeron viscosum, *Linn.*) dipped in milk, hung up in the rooms, attract all the flies. Glossina morsitans, the Tsetse fly of Africa, whose bite is fatal to the horse, the bullock, and cow, is supposed to be the same as the Tsalt salya or Zimb of Abyssinia, mentioned by Bruce. See Bane; Fleabane.

FLY-CATCHERS, birds of the family Muscicapidæ and sub-families Muscicapinæ and Myiagrinæ, comprising the genera tchitrea, myiagra, leucocerca, chelidorhynx, cryptolopha, hemichelidon, alseonax, ochromela, cumyias, cyornis, muscicapula, nitidula, niltava, anthipes, siphia, and erythrosterna, birds with large gapes, which subsist on flies and small insects. Many of them have bright-coloured plumage. Tchitrea paradisi, the Husaini bulbul, has its tail feathers greatly elongated, and is a beautiful object when in flight. The red-breasts, species of cyornis, occur through all the East Indies; and the beautiful sapphire-headed fly-catcher, Muscicapula sapphira, is found in Nepal and Sikkim.

FLYING CATS, a name given to the flying mammals of the genus Galeopithecus, of the family Galeopithecidæ, and natives of Malayana. They are usually called flying lemurs. They have a membrane connecting their limbs, but they have not the power of sustaining flight. They have pectoral mammæ, and sleep with their head downwards. They are nocturnal and insectivorous.—*Jer.*

FLYING FISH. Jerad ul bahr, Arab. The flying fish are species of the genus Exocetus, belonging to the abdominal Malacopterygii, forming part of the family Exocidæ. Their pectoral fins are very long, nearly equal to the length of the body. The fish, to escape its enemies, rises into the air, and the pectoral fins vibrate while wet, and re-vibrate as often as they pass through a crest wave, wetting the fins afresh. There are many species,—Exocetus volitans, *Linn.*, E. solitarius, E. evolans, E. exiliens, E. mesogaster, and others. The E. volitans is usually 10 or 12 inches long, but E. solitarius attains to 15 or 20 inches at greatest. They are captured by torch-light in the West Indies. At the island of St. Helena they are from 15 to 20 inches long; are used there, as in the West Indies, for food, being very sweet and of delicate flavour. E. solitarius is so named from not being seen in large flocks like the others; and it appears to have other specific differences. When watching these fishes closely, as they passed under the stern of the ship, Dr. Bennett remarked that the extension of both the pectoral and ventral fins was effected with an audible rustling noise, and only a vibratory motion was perceptible afterwards; nor was there any expansion and contraction of those organs during flight, after the first effort. Had there been any percussion of the pectoral fins, it would have been distinctly visible, owing to the proximity of the fish; indeed, to produce percussion of the fins, it would be requisite to have an elaborate muscular apparatus; and as, on dissection, such is not found, the theory of that action of the fins may be considered unsupported by facts. The fish, when keeping in a direct line of flight, proceed for a great distance; but when this is deviated from, and it turns round (which action was apparently performed by the tail, not by the pectoral fins), it only proceeds about the length of a yard, and drops into the water. The greatest length of time he had seen them fly has been 32 seconds, and their longest flight from 200 to 250 yards. The flying fish has a steady flight, resembling that of a flock of swallows; but when pursued by enemies, or frightened by the passage of a ship through the water, it loses this graceful style of volition, its flight becomes hurried, irregular, stiff, and awkward,—a kind of scrambling pace,—and it frequently drops into the water, and again renews its flight in the same unsteady manner. When a large shoal of them emerged at the same time from the sea, it was perceived that some of them dropped immediately, others passed over a distance of 20 yards and fell, while the rest continued a steady flight of 170 to 200 yards, and passed out of sight. Their long pectoral fins or wings have the rays united by a fine delicate membrane, flexible and transparent; the colour of this membrane varies; and some have the ventral fins so large as to appear to have four wings.—*Collingwood; Gatherings of a Naturalist in Australia, by G. Bennett, M.D.*, p. 15; *Captain B. Hall's Fragments.*

FLYING FOX.

Cham-guddri, . .	Beng.	Gadal; Chamgidar,	Hind.
Chidgu, ...	,,	Brin, ...	Lepch.
Phiyu-longta, . .	Bhot.	Gabbelay, ...	Tel.
Kanka-pati, . .	Can.	Jiburai, ...	,,

Flying fox is the name by which Europeans in India designate the frugivorous bats of the family Pteropodidæ, of the S.E. of Asia, Malayan islands, as far as Australia. The females of some have nursing pouches. The species are Pteropus Edwardsi, Pt. Leschenaultii, Pt. edulis of Java, and others; also Cynopterus marginatus, C. affinis, Pt. minimus from Tenasserim. The flying fox of Australia is Pt. poliocephalus. They roost during the day on trees, generally in large colonies, to the number of many hundreds, often, occupying a single tree. Towards sunset they fly off, sometimes to great distances, to trees that are in fruit, for the garden fruits, and those of the nim, ber, and fig trees, returning at early dawn from their hunting grounds to their roosting tree, where they wrangle to get the best places, striking with their wing claw, screaming and cackling, and circling round the tree till they can hook on. They hang with their heads down.—*Jerdon.*

FLYING GURNARD. Of these fishes two species occur, one the Dactylopterus orientalis of the Indian Ocean, the other D. volitans of the Mediterranean, Atlantic, and West Indian seas. A singularly beautiful species raises itself into the air by means of its large pectoral fins, which they are said to move in their flight. See Dactylopterus; Trigla.

FLYING HORSE, species of Pegasus.

FLYING SQUID, Loligo sagittatus.

FO, the Chinese name for a Buddha, for Sakya Muni, and proceeding Buddhas. One fo is said to have gone from India to China, B.C. 1200. See Adam's Peak; Buddha; Kwang-yin.

FODDER for cattle in India is of various plants,—the root of the hariali grass, Cynodon dactylon; the stalk of the joar, Sorghum vulgare, cut into small pieces; the straw of several grasses, Paspalum scrobiculatum, Penicillaria spicata, Panicum Italicum, P. frumentaceum, P. miliare, and Eleusine Ægyptiaca. Buffaloes are also fond of kans (Saccharum [imperata] spontaneum) and its varieties. The pasture grasses in Hurriana are celebrated for the herds of cattle which graze on them, species of Panicum, Pennisetum, Cenchrus, Chætaria, Vilfa, Dactylolenium, Chloris, Eleusine, Achrachne, Poa, Eragrostis, Andropogon, species of Saccharum and Rottbollia. A clover or lucerne, shotal, is grown; also sinji, but this principally by Europeans for their horses and other cattle. Cattle are usually fed (besides grass) on bhusa, or, as it is called in Panjabi, turi, the chopped straws of wheat and barley; besides which they get karbi, the dried stalks of joar (Sorghum vulgare); this latter when green and fresh is called charri. Chopped leaves of the ber (both Zizyphus vulgaris and Z. nummularia), called mulla, are much used, and are said to be fattening. In Shahpur and one or two other districts, turnips are grown very extensively for feeding cattle during the cold weather, and they often attain a larger size than in Europe. The markan grass, the wild sawank, phog, the seed of Calligonum polygonum, is used, and also as human food in the Panjab in times of famine. Dhaman or anjan (Pennisetum cenchroides) is considered the best grass for cattle, rapidly improving their condition and increasing their produce in milk. Jhang is a scented grass, probably Andropogon schœnanthus; and the root of A. muricatum forms the khas khas used in matting tatties and screens for cooling the atmosphere. The leaves and fruit of many trees are used; and Dr. J. L. Stewart names 64 trees which furnish fodder in the Panjab.

As fodder for camels, there are Khazya stricta, *D. C.*; Salsola species—Calotropis Hamiltonii, *W.*, Euphorbia nereifolia, *L.*; Sueda species—Trianthema micrantha, Xygophyllum simplex, etc. The camel eats the Nerium odorum, but it invariably proves fatal.

The farmers of India have over long trusted to the natural grasses, and this has led to the impression that India is very deficient in green crops suitable for the food of cattle, and that, from June to October especially, there is nothing to be got but roots; and the great difficulty has been to find some crop that will yield green fodder during the months of June, July, and August.

In the vicinity of Madras, at the experimental farm at Sydapet, Mr. Robertson in 1870 reported that with care an abundance of green fodder may be maintained all the year round; that an acre of land thus laid out will amply keep two or three horses, and double that number of cattle; that, with abundance of water, hariali grass is the most profitable crop; with a tolerable supply, Sorghum saccharatum pays best; with water only from October to May, yellow cholum and cumboo will maintain an abundant and continuous supply of green and nutritious food. He says the cumboo crop afforded an abundant supply of green fodder at a time when it is usually very scarce. Under irrigation it is possible to grow yellow cholum so as to afford a supply of green fodder throughout the hot season; but there are large tracts of country to which irrigation cannot be applied, in which cumboo will yield excellent green fodder during the season when the stock-feeder finds it the most difficult to maintain the condition of his animals. Cumboo sown in the middle of June received no water other than the ordinary rainfall. Within six weeks it reached an average height of not less than eight feet, and was then cut for green fodder. The cattle eat it greedily, and fattened much more rapidly than usual on other green crops. The weight of the fodder reached the high figure of 1800 pounds per acre. It would be the easiest thing in the world so to arrange the planting of the cumboo as to obtain a constant supply of fodder at all times. On one occasion, when several advantageous circumstances met, the hariali grass at this place grew to the enormous height of eight feet. At the People's Park, Madras, three crops of excellent grass are cut each year, on areas that are not irrigated. Yellow cholum is cultivated almost everywhere as a grain crop; but at the Government farm it was cut several times for fodder, and then allowed to go on to grain. The plant grows so rapidly, that in sixty days after planting the stems will be seven feet high and about an inch and a half thick. This stem is perfectly succulent, and is eaten with avidity by cattle and sheep. Horse gram grows almost anywhere, requires a minimum of care, and gives a good dry fodder or hay. Without other help than the ordinary rain, it will give 7000 pounds of green fodder per acre,—a fodder which is very fattening, and well liked by cattle and sheep. If abundance of water be available there is nothing like hariali grass. At the Kistnampett sewage farm, an acre of land produces not far short of 100,000 pounds of green fodder in the twelve months.—*Powell; Royle, Him. Bot.* p. 421; *Mason; Williams' Middle Kingdom; Hooker's Him. Jour.* ii. p. 289; *Mr. Robertson's Report.*

FŒNICULUM DULCE, Hwai-hiang and Siau-hwin-hiang of the Chinese. In China, the stalks and leaves are eaten as a condiment.—*Smith.*

FŒNICULUM PANMORI. *D. C.*

Anethum Panmori, *Roxb.*

Razeeanuj, . . .	Arab.	Badian, ...	Pers.
Mooree, ...	Beng.	Moodorika, . . .	Sansk.
Goowa mooree, .	,,	Dewadooroo, . .	Singh.
Warealee, . . .	Guj.	Rata-enduru, . .	,,
Sonf, Mayuri, . .	Hind.	Perun siragam, .	Tam.
Panmuohri, . .	,,	Pedda gillakara, .	Tel.

Cultivated in India. Flower small, bright-yellow, February; fruit, March and April. Seeds of a pleasant, sweet, warmish taste, used for culinary and medicinal purposes, especially among the natives.—*Roxb.*; *Voigt; Beng. Disp.* p. 208.

FŒNICULUM VULGARE, fennel; Anethum fœniculum, *L.*

Sonf, ...	Hind.	Bekh-i-karafsh, . .	Pers.
Adas, ...	Jav.	Shohi kire, . . .	Tam.
Bekh-badian, . .	Pers.		

Cultivated in the plains of the Panjab as a pot herb. An essential oil is prepared in large quantities from the seeds. The odour of the entire plant is strong and persistent; that of the roots disappears on drying.—*Stewart.*

FO-HI, the Great, Brilliant (Tai Hao), in Chinese history, a king who cultivated astronomy and religion. Fo-hi is the first named sovereign of the Chinese, but the date of his reign is not ascertained. Yu, the Great, is the first monarch

of whose reality there is no doubt, and his accession occurred about 2000 years before the Christian era. Husbandry and silk-weaving were the earliest of the arts cultivated by this people: the former was introduced by Shin-nong, the immediate successor of Fo-hi, and silk-weaving by an empress; and to both of these the Chinese perform sacrifices on their annual festival days. Husbandry is still highly honoured, and annually, at a grand festival in honour of the spring, the emperor ploughs and sows a field. The Egyptians, Persians, and Greeks held games and festivals, mingled with religious ceremonies, at seed-sowing, as Hindus now do; and in England formerly the festival of Plough Monday was held, during which the plough light was set up before the image of the patron saint of the village.—*Elliot.*

FOH-KIEN, a Chinese district, lies on the coast, and is bounded on the N.E. by Che-kiang, on the N.W. by Kiang-si, and on the S.W. by Kwang-tung. Its surface is estimated about 57,000 square miles, and its population is about fifteen millions. Foh-kien is the principal black tea district of China. The renowned hills of Bohea are distant 152 miles from Fu-chu-fu, the capital of Foh-kien.—*Sirr's China and Chinese.*

FOIL. In the arts, metals are rolled and beaten out into thin leaves; and large quantities of gold, silver, tin, and brass foils are so used in India, Burma, and China for ornamental work in their temples and in ornaments. In jewellery, foils are manufactured by painting a sheet of silver foil with the required colour mixed in a transparent varnish, and placed beneath a precious stone.—*King.*

FO-KWE-KI, a Buddhist work. See Sakya.

FOLIA MALABATHRI, F. tamalapathri, and F. Indica of Dioscorides and Pliny, supposed to be Cinnamomum tamala or C. nitidum, *Nees;* also thought by some to be the leaves of piper betel.

FO-LING, a root so called by the Chinese, comes from the rhubarb region, and formerly well known in the European Materia Medica under the name Radix China.—*Yule, Cathay,* i. ccxvi.

FOLK-SONGS. The influence of Brahmanic literature does not seem to be much felt among those who have transmitted the folk-songs from generation to generation. Though many of them refer to the subject of death, there is scarcely a word about transmigration. When the ordinary Hindu is about to die, 'he looks away from ceremonial and obscene tradition unto the great God; for throughout these songs there is but one God to the mind and heart of the worshipper.' The Dasari are professional minstrels, who beg and sing in streets and villages and at the gates of pagodas, and, being all worshippers of Vishnu, invoke their one God by that name. Some of the folk-songs ridicule the distinction of caste and the pretensions of the Brahmans, and broadly state that with God there is no distinction of persons, except after the eternal laws of right and wrong. In others, life is looked upon as a mere illusion or maya. It is a time of probation; but it is so much easier to do wrong than to follow right, that in reality men may be carried farther and farther away from God. Throughout many of these there breathes an overwhelming sense of sorrow and failure that calls forth our deepest compassion. Some of the folk-songs of Southern India might be sung by Bengalis of the Bramo Samaj'h, many of the strains containing devout aspirations after goodness, wise proverbs for the regulation of life, and earnest thanksgivings to the deity for blessings received.—*Pioneer.*

FOLLIS, a copper coin, appears to be the same as the Arabic Fals, pl. Falus, formerly known in Spain as the name of a small coin, Foluz.—*Yule, Cathay,* ii. p. 481.

FOO-CHOO-FOO, in lat. 26° 7′ N., and long. 119° 15′ E., is the capital of the Chinese province of Foh-kien. It stands on the banks of the river Min, about 38 miles from the sea. It means happy district. The celebrated fingered citron is cultivated in great perfection, and the district around is the great camellia garden of China. Its ixoras and hydrangeas are also handsome. Early in spring the hill-sides were covered with a beautiful daphne with lilac flowers (Daphne Fortuni, *Lindley*), and Azalea ovata, *Lindl.;* and Buddlea Lindleyana has its long spikes of purple flowers hung in profusion from the hedges on the hill-sides, often side by side with the Glycine Sinensis. One of the most beautiful shrubs of Northern China, the Weigela rosea, was first discovered in the garden of a Chinese mandarin near the city of Ting-hae, loaded with noble rose-coloured flowers. In the hedges the beautiful spring flowering Forsythia viridissima, with several species of wild roses, Spiræa Reevesiana, clematises, Glycine Sinensis, and the lovely Azalea Sinensis.—*Fortune's Residence among the Chinese,* p. 27; *Wanderings,* p. 317.

FOOD.

Taam, Ghaza, . . ARAB.	Adhar, ... SANSK.
Nourriture, . . . FR.	Alimento, ... SP.
Khana; Khana-pina, HIND.	Choram, ... TAM.
Cibo vivanda, . . . IT.	Bhojnam, ... TEL.
Razaq; Khuraq, . PERS.	Yemek; Yezejek, TURK.

The food of man is obtained from the vegetable and animal kingdoms, but in by far the larger proportion from plants. Flesh and bone and blood, when chemically analyzed, yields the following elementary substances:—carbon, hydrogen, nitrogen, oxygen, sulphur, phosphorus, potassium, sodium, calcium, magnesium, iron, manganese, aluminum, copper, chlorine, fluorine, and silicon. These ultimate elements occur in the human body variously combined into compounds, with very different physical properties and chemical relations. Carbon, hydrogen, oxygen, and nitrogen are called organic elements, because no animal cell and no vegetable cell can grow unless the whole of these elements exist. The substances belonging to this group which enter into the food of man are cellulose, starch, sugar, and oil, *Cellulose,* forming the external membrane of the cells of all plants, is found in all food derived from the animal kingdom. Though similar in composition to starch, it differs from starch in being insoluble; but, as they feed largely on it, it must be extensively taken up into the system of herbivorous and other of the lower animals, and must be similarly adapted by the human stomach, perhaps with some difficulty, as carrots, turnips, radishes, uncooked vegetables, etc., are not readily digested. Cellulose can be converted into starch by sulphuric acid. Substances yielding *starch* enter very largely into the diet of man and of the lower animals; and with man starch is generally partaken of in the form of

flour, either of grains, of roots, and root-stocks, of the stems and in the seeds of plants. There are few or no vegetables that are eaten that do not contain starch. It is found in turnips, carrots, potatoes, cabbages, parsnips, beans, peas, wheat, barley, oats, and the rest of the cerealia, in all seeds and fruits; but, as with the sago, Portland sago, tapioca, cassava, the various arrowroots, potato starch, sago starch, etc., it is first, before being used, separated from the other vegetable elements. Starch has the property of combining with water at a temperature of 180°, and forming a gelatinous mass, in which state it seems more digestible. The carrot, turnip, parsnip, cabbage, and Jerusalem artichoke, owe their dietetic value to the starch which they contain; as also the roots of the Arum maculatum, Orchis mascula, inuline from the Inula helenium, lichen starch, found in almost all kinds of Algæ, and in the sea-weeds. One of these sea-weeds, the Plocaria tenax or Chinese moss, is known in all the Eastern seas.

Sugar can be converted into alcohol, and it exists in plants dissolved in the water which they naturally contain. It is taken into the animal system to maintain the animal heat, and persons and animals get fat on it. Cane sugar consists of carbon 12 atoms, hydrogen and oxygen each 9, and water 2 Sugar is obtained also from beet, the maple, the birch, the various palms, from the Caryota urens, Phœnix sylvestris, Ph. dactylifera, Corypha umbraculifera, Palmyra, Arenga saccharifera, cocoanut, etc.; it exists also in milk, the grape, in the fruits and other sweet parts of plants, and in the stems of all grasses. The yield of sugar from beet is 8 or 9 per cent.

The *alcohol* obtained from these by fermentation, in the form of spirits, wines, and beers, is largely used. Although resembling sugar in composition, its effects on the animal system are very different. It acts on the nervous system as a stimulant and narcotic; it is very valuable in medicine, and also of great value to people in health, exhausted by long-continued mental or bodily labour. In excess alcoholic substances are injurious; but amongst the earliest discoveries of every race has been the art of producing intoxicating stimulants. In India, boasting of an ancient civilisation, opium, hemp and its charras resin and bhang, the various palm-wines, the beers from millets, and ardent spirits from cereals and from palm-wines and sugars, have been used from time immemorial. As Mr. Cornish observes (page 15), the effect of those articles in moderation is probably rather beneficial than otherwise. Opium-eating and ganjah-smoking are both occasionally carried to excess, and the consequences, in injury to the nervous tissues of the body, are very similar to those resulting from the excessive use of ardent spirits. The moderate use of all these agents, however, appears to prevent undue waste of tissue in the body, and to render the frame less susceptible to the action of those impalpable but pestiferous poisons which are so prevalent in the soil and atmosphere of tropical countries. The craving for the use of these things undoubtedly arises out of some urgent requirement in man's nature, and the extent to which they are used in Southern and Eastern Asia is perhaps greater than in any part of Europe; in some parts certainly it is so.

Of the nutritious proteinaceous or nitrogenous articles of diet, it may be added that the substance called protein is the basis. Protein is the first element that appears in the development of the vegetable cell. It is consequently universally present in plants. It also constitutes the chief material of the tissues of animals. In the vegetable and animal kingdoms it assumes various forms, and is called albumen, fibrine, and caseine, according to its physical and animal properties. Herbivorous and graminivorous animals derive this constituent directly from the vegetable kingdom; the carnivora obtain it indirectly from the plants, through the animals that they eat. Man obtains his supply of protein from both sources.

The fat of animals, ghi or clarified butter, and the sesamum oil are almost the sole oleaginous or fatty substances used in the S. and E. of Asia for food. Pure butter is rarely used. These consist of carbon 11, hydrogen 10, and oxygen 1, and their value in the animal economy is as heat-producers, for which they are superior to sugar or starch. The oleaginous principle, however, seems also to aid in the development of the proteinaceous tissues, and to act as a kind of preparation for their growth. In disease, oils are of undoubted value.

Many tables have been published showing the chemical composition of the various substances used as food by man. Perhaps those by Dep. Inspector-General Mayer of the Madras army, Dr. Lyon Playfair, and Dr. Watson, are the most valuable.

The following table shows the composition of food in 100 parts:—

Food.	Nitrog. Flesh-forming Ingredients.	Non-azotised Heat-giving Principles.	Mineral Matter.	Carbon.
Milk,	4·50	7·90	0·60	6·94
Butcher's meat, free from bone,	22·30	14·30	0·50	21·56
Bacon, pork,	8·36	62·50	0·50	53·22
Fish,	14·00	7·00	1·00	9·15
Flour,	17·00	66·00	0·70	45·50
Barley meal,	14·00	68·50	2·00	40·50
Oatmeal,	13·60	70·30	3·30	44·10
Indian meal,	10·71	72·25	1·04	36·41
Lentils,	28·22	40·08	0·00	...
Eleusine coracana,	18·12	80·25	1·03	...
Sorghum vulgare,	15·53	83·67	1·26	...
Penicillaria spicata	13·92	83·27	5·73	...
Peas,	23·40	60·00	2·50	35·70
Rice,	5·43	84·65	0·52	36·00
Potatoes,	1·41	22·10	1·00	12·20
Carrots,	1·48	11·61	0·81	5·40
Turnips,	1·64	10·00	1·62	5·20
Parsnips,	2·10	17·70	0·80	8·63
Mangel-wurzel,	1·60	12·26	1·14	5·50
Cabbage,	1·75	4·05	2·20	2·65
Cocoa (nibs),	9·56	85·76	2·70	66·56
Sugar,	0·00	100·00	0·00	42·58
Suet, fat, butter,	0·00	100·00	0·00	79·00
Bread,	6·83	48·05	1·51	25·19
Cheese,	31·02	25·30	4·90	36·80
Beer,	0·35	9·17	0·20	4·33

The following table shows the relative quantities of nitrogenous matter contained in various cereals and pulses. The abundance of this element, together with substances abounding in carbonaceous or starchy matter, in 100 parts, varies in specimens from different parts of India:—

Name.	Nitrogenous Matter.	Starchy Matter.	Fatty or Oily Matter.	Moisture.	Mineral Constituents.
Gram, Cicer arietinum, . . .	18·05 to 19·32	61·70 to 62·20	4·56 to 4·95	10·8 to 12·24	3·05 to 3·12
Arhar, Cajanus Indicus, . . .	19·83 ,, 20·38	61·90 ,, 64·32	1·32 ,, 1·86	10·77 ,, 12·80	1·52 ,, 2·89
Mattar, Pisum sativum, . . .	21·80 ,, 25·20	58·38 ,, 62·19	1·10 ,, 1·12	12·60 ,, 12·70	2·29 ,, 2·53
Lentils, masur, Ervum lens, .	24·57 ,, 26·18	59·34 ,, 59·96	1·00 ,, 1·92	10·72 ,, 12·70	1·20 ,, 2·37
Khessari, Lathyrus sativus, . .	31·50	54·26	0·95	10·70	3·19
Lablab vulgaris, ...	22·45 ,, 24·55	60·52 ,, 60·81	0·81 ,, 2·15	10·81 ,, 12·02	2·86 ,, 3·02
Rawan, Dolichos Sinensis, . .	24·00	59·02	1·41	12·44	3·13
Kulthi, Dolichos uniflorus, . .	23·03 ,, 23·47	61·02 ,, 61·85	0·76 ,, 0·87	11·30 ,, 11·50	2·86 ,, 3·34
Guwar, Cyamopsis psoraloides, .	29·80	53·89	1·40	11·75	3·16
Bhut, Soja hispida, ...	37·74 ,, 41·54	29·54 ,, 31·08	12·31 ,, 18·90	7·96 ,, 8·12	4·00 ,, 4·32
Urd, Phaseolus radiatus, . . .	22·48	62·15	1·46	11·00	2·91
Mung, Phaseolus mungo, . .	23·54 ,, 24·70	59·38 ,, 60·36	1·11 ,, 1·48	9·20	3·26
Moth, Phaseolus aconitifolius, .	23·80	60·78	0·64	11·22	3·56
Black sahuca bean, ...	41·54	30·82	12·31	10·4	4·93

The following lists of cereal grains and pulses give the names of the principal food-plants cultivated in the Madras Presidency :—

Hordeum hex., barley; Jow.
Triticum æst., wheat; Gihoon, Godoomay.
Eleusine coracana, ragi; Natchnee ragi, Kavaru.
Oryza sativa, rice; Chawl, Arisi.
Setaria Italica, Italian millet; Kala-kangnee, Tenney.
S. Germanica, German millet; Kora-kang.
Panicum miliaceum, common millet; Sawee cheena warree, Varugoo.
Penicillaria spicata, spiked millet; Bajri, Cumboo.
Sorghum vul., great millet; Jowari, Cholum.
Zea mays, Indian corn; Mukka jowari, Boota, Muka cholum.

Pulses and Millets for Man or Beast.

Medicago sat., lucerne.
Trigonella fœnum græc., fenugreek; Maitee ki bajee, Vendium.
Psoralea corylifolia, hazel-leaved psoralea; Bawurcheen, Karpooga arisi.
Cicer ariet., Bengal gram; Channa, Cadalei.
Ervum lens, lentil; Massur, Massurpurpoo.
Pisum sativ., common pea; Buttani, Puttani.
Phaseolus vul., French bean; Bakla.
P. lunatus, Duffan bean.
P. radiatus, green gram; Hari, Moong, Putcha payroo.
P. mungo, moong or monash, green gram; Mash, Oolandoo.
Dolichos uniflorus, Madras gram; Kulti, Kollu.
D. Sinensis; Suffed lobeh.
Lablab vulgaris, Bullar; Saim ki-puttee, Motchay cottay.
L. vulgaris, *var.*; Suffed, Vellay mochay.
Psophocarpus tetragonolobus, winged pea; Pankke mutur.
Canavalia gladiata, sword bean; Lal kudsumbah, Segapu, Thumbetten.
Cajanus Indicus, pigeon-pea; Tur dhal, Tovarai, Purpoo.
,, *var.*, dholl, Lal-toor, Segapu tovarai.
,, ,, Pad-ka-toor, Malay tovarai.

Esculent Vegetables.

Allium cepa, the onion.
Amarantus polygamus, greens; vegetables.
A. atropurpureus, purple vegetable.
Andropogon esculentum, or lemon grass.
Arachis hypogæa, the earth nut.
Arum furfuraceum, scaly yam.
Batatas edulis, sweet potato.
Capsicum purpureum, red pepper.
C. minimum, small or bird's-eye popper.
Cucumis usitata, large cucumber.
C. sativus, common cucumber.
C. citrullis, or water melon.
Dioscorea purpurea, purple yam.
D. glabra, the smooth yam.
D. rubella, the red yam.
D. anguina, the snake yam.
Dolichos catjang, long or French bean.
D. lablab, the Indian bean.
Hedysarum tuberosum, the Batraj bean.
Hibiscus sabdariffa, red sorrel or roselle.
H. longifolius, variety for do.
Jatropha manihot, the cassava yam.
Luffa pentandra, five-cornered gourd.
L. decandra, ten-cornered gourd.
Lagenaria vulgaris, cuddoo or bottle-gourd.
L. pipo, the pumpkin.
L. melo-pipo, or squash.
Momordica charantia, or small gourd.
Ocimum vilosum, mint.
Raphanus sativus, or radish.
Solanum melongena, brinjal.
S. lycopersica, tomato or love-apple.
Trichosanthes anguina, the snake gourd.

With a rapidly-increasing population in all parts of the world, the production of food is an object of the first importance to all classes; and the vegetable substances from which man derives his principal sustenance, necessarily occupy the main attention of the cultivator, while the products form most important staples of domestic and foreign commerce. The breadstuffs of commerce consist of the nutritious cereal grains, the tuberous rooted plants, and the farinæ yielded by trees. Amongst these are wheat, barley, oats, rice, maize, millet, Guinea corn, the sago of palms, of the plantain and banana, the bread-fruit tree, the edible root-crops and starch-producing plants, which are a somewhat extensive class, the chief of which, however, are the common potato, yams, coco or eddo, sweet potato, the bitter and sweet cassava or manioc, the arrow-root, sago, and other plants yielding starch in more or less purity. Wheat, maize, and rice form very important articles of commerce, and are largely cultivated for local consumption and export, a portion being consumed in the arts, as starch for stiffening linens, etc., and for other purposes not coming under the term of food. The kind of bread in common use in a country depends partly on the taste of the inhabitants, but more on the sort of grain suitable for its soil. The Chinese use little bread, and that little is generally of wheat-flour. In the Panjab, wheat, barley, and millets are consumed in nearly equal proportions; in Berar, Bombay, and Mysore, eighty-two per cent. of the food-growing area is sown with millets; in Bengal, Assam, and Burma, rice is the chief product; in Madras, one-third rice and two-thirds millet. Cakes of wheat-flour prepared on the girdle are a common article of diet amongst the races of Northern and Central India. Further south, on the table-lands of the Peninsula, the natives of India use unleavened cakes made of the great millet, Sorghum vulgare, the spiked millet, Penicillaria spicata; and the very poor of the people use the hard ragi, Eleusine coracana, in the form of cakes or porridge. Barley is occasionally used to the westward. Cakes made of the flour of the Indian corn, the Zea mays, are scarcely used in India. They are rather less

nutritious than those made from wheat, but more fattening, in consequence of the greater quantity of oil contained in it. Along the seaboard, however, of all the south-east of Asia, in the deltas and valleys of the great rivers, the Indus, the Ganges, the Brahmaputra, in all Bengal, all Burma, in the delta and valley of the Irawadi, in all the seaboard and near the great rivers of China, rice is the longed-for article of diet, boiled and eaten alone, or with a little animal food, or with condiments made into curry or chatni; or it is made into the cakes which are sold through the bazars under the familiar name of 'appa' or hoppers. In the interior of India, on the table-lands, other grains and pulses are used, such as wheat, the various millets, and Indian corn; and in Northern India, the pulses, chick-pea, the lentil, and dhals are all in extensive use. But well-to-do people prefer rice, which is more and more used as increasing prosperity enables them to obtain it, and the people speak of using it once or twice a day or week, to indicate their larger or smaller means. The facility with which it can be cooked, the little cost of cooking it, and its lightness in digestion, are its great recommendations, the cleaning, grinding, and cooking of the harder grains costing much time and money. Rice flour is scarcely ever made into fermented bread, although it is said to be occasionally mixed with wheat flour for that purpose. The superiority of wheat to all other farinaceous plants in the manufacture of bread is very great. Its essential constituents are starch, also called farina or fecula, gluten, and a little sugar and albumen. It is occasionally adulterated with alum, which is added to whiten the flour, and to enable it to retain a larger quantity of water. Salt is also employed in the adulteration of wheaten bread, to whiten the flour, and enable it to hold more water, and carbonate of magnesia is fraudulently used to obtain the same result. In Eastern and Southern Asia, the ordinary wood bread, the well-known sago, is made from the starch granules contained in the piths of several species of palms. In the Archipelago, sago flour and prepared sago are largely used as an article of diet, alike for the robust labourer and for the invalid, and in a prepared form is extensively exported for the use of the sick and the nursery. Amongst the Arabs, burghoul consists of wheat boiled with leaven, and then dried in the sun. The dried wheat is preserved for a year, and boiled with butter and oil. Leavened bread is called Khubz khamīr, and unleavened bread Khubz fatīr.

The seeds of all the Gramineæ, those of the darnel alone excepted, are capable by cultivation of becoming alimentary. The value of grains, generally speaking, is directly as the size of the caryopsis, and inversely as the thickness of the pericarp. When the grain abounds in perisperm, it is heavy; when the envelope is thick, the grain is, on the contrary, light. Thus—

100 of wheat, 450 grains.	100 of rye, 260 grains.
100 of barley, 335 ,,	100 of oats, 250 ,,

As Dr. Royle has forcibly pointed out, the slightest enlargement in the size of a grain, or the least increase in the productiveness of an ear of corn, when extended into the agriculture of a country, will infinitely increase its resources and revenues.

The chemical composition of the grain influences materially the quality of the resulting bread. If the gluten be absent, no fermentation takes place in the dough; if the gluten be in excess, the bread is heavy and acid. Wheat flour may be considered the type of all that is suitable for alimentary purposes, and in the degree of deviation from this standard consists the inferiority of the other grains. It is very largely used by the races occupying Hindustan, Rajputana, the N.W. Provinces of India, in the Panjab and in Afghanistan, but almost wholly in the form of unleavened cakes or chapatti, prepared on the girdle; for most of the Hindu people of India, as a rule, are prohibited by their religion or prejudices from partaking of food prepared by others, many of them even of food of which others have seen the preparation; and as the stricter Mahomedans object to use leavened bread, from the use of the toddies or fermented palm-wines as a leaven, unfermented bread, or porridge of flour and water, with perhaps the addition of salt, are alone employed. As a leaven for bread, the substances employed are yeast in Europe, and the palm-wines or toddies in Eastern and Southern Asia; and the substitutes for these are sesqui-carbonate of ammonia, carbonate of soda and hydrochloric acid, or carbonate of soda and tartaric acid.

Several calculations have been made to ascertain the available supply of food for India. Sir Arthur Cotton estimates that two acres of rice land will feed seven people for a year; and Mr. Fischer, the manager of the Shevagunga estate, considers that a family of five will consume under 6 lbs. of grain per diem.

It is estimated that in the Madras Presidency, 15 millions of acres of dry land, and 5½ millions of wet land, are devoted to the production of food-grains; also that an acre of the best rice land will yield from 1080 Madras measures in the southern districts, to 1200 measures in Godavery and Kurnool, *i.e.* from 30 to 33 cwt.; and the worst rice land in those two districts varies from 300 to 533 measures, *i.e.* from 8 to 14 cwt. Probably, therefore, 20 cwt. of paddy or rice in the husk, or 10 cwt. of cleaned rice, may be taken as a good average of produce of irrigated land; and 190 measures, or about 5 cwt., that of dry land, whether it be devoted to Eleusine coracana or ragi, Penicillaria spicata or cumboo, and Sorghum vulgare or cholum, or any other of the unirrigated crops which form the food staple of the poorer classes. One acre of wet land will thus produce as much food as two acres of dry land; and 55 million cwt. of rice, and 75 million cwt. of dry grains, was the estimated amount of produce in the Madras Presidency, when it had a population of 26,539,052 souls. This allows about 5 cwt. per soul per annum. Mr. Dalyell estimated the annual yield at 129 million cwt., or 1½ lbs. daily for each person; whereas he considers that a family of five can subsist on 7 lbs. per day, and three acres of superior land supposing one acre to be irrigated, or four acres of unirrigated land, would support such a family for a year. The Madras Presidency, with a long seaboard, both imports and exports largely food articles, the exports exceeding the imports five or six times, and perhaps one-third of the population occasionally use animal substances, as additions to their vegetable diet.

Animals of every class — quadrupeds, birds, fishes, reptiles, insects, and their larvæ—are used

by man as food, and are acknowledged to contain a very large amount of alimentary substances, and these are classed as the nutritious proteinaceous or nitrogenous articles of diet. There are few living creatures in the south and east of Asia, which some one or other of its multitudinous races do not use as food,—the horse, the bullock, the tiger, and all the cat tribe; the dog, birds of all kinds, birds of prey excepted; almost every fish, frogs, snakes, ants, beetles, and their larvæ; crustacea and molluscs of every kind; and the bodies of animals that have been killed or have died, are all utilized. The Hindu Brahman and Rajput and Vaisya, as a rule, will not eat animal food, and no Hindu can eat the cow without ceasing to be of the four Hindu castes; but all Sudra Hindus eat sheep, goats, fowls, mutton, fish; and the servile races eat nearly all quadrupeds, many birds and reptiles, amongst them field rats and frogs. The majority of northern Brahmans may and do eat animal food, generally mutton or fish, though priests, while officiating as such, perhaps do not. For although most Hindu priests are Brahmans, all Brahmans are not priests; as amongst the Jews the tribe of Levi furnished the priesthood, so among Hindus it is largely furnished from that of Brahmans.

Flesh or fish of any kind is, however, but little eaten by any race or caste in India, owing to their inability to buy it. Even Mahomedans, who may eat all but the pig, only use these in small quantities as a relish with their mainly vegetable diet. Rajput and the hunter and wild races are keen sportsmen, and eat what they can kill in the chase, even the flesh of the wild pig; and all sects and all classes of Hindus and Mahomedans make use of milk, curds, and ghi. Scrupulous Hindus will not eat fowls or their eggs. The animal food of which the greatest number would partake is fish, but, as already explained (Fishermen, p. 1125), from this the salt monopoly debars them, though the seas and rivers teem with this form of animal life. From the climate and the gelatinous character of the fish, to be cheaply supplied they need to be quickly cured, and fishermen to effect this take brine with them in their trips. The consumption of fish is merely limited by the cost of the supply. In Canara, too, neither sheep nor oxen are reared, and fish alone are available. The Famine Report scarcely alludes to the available fish supply. But, in para. 69 of their Report, the Famine Commissioners show that the seasons of drought in India have always been followed by scarcity or famine:—

1769. Drought in Bengal.
1770. *Famine* in Bengal.
1782. Drought in Bombay and Madras.
1783. Drought in Upper India.
1783. *Famine* in Madras; *scarcity* in Bombay.
1784. *Famine* in Upper India, from the Karamnasa to the Sutlej.
1791. Drought in Bombay, Hyderabad, and Madras.
1792. *Scarcity* in north part of Madras; intense *famine* in Hyderabad and Southern Mahratta country; severe *famine* in Dekhan, Gujerat, and Marwar.
1802. Drought in South Hyderabad and in Dekhan.
1803. Drought in Ceded Province of N.W. Provinces and in Central India.
1804. *Famine* in N.W. Provinces, and *scarcity* in Central India and Rajputana.
1806. Drought in central districts of Madras, from Trichinopoly to Nellore.
1807. *Famine* in central districts of Madras.
1812. Drought in Gujerat, Cutch, and Kattyawar, and to some extent in Madras; also in Rajputana and Central India.
1813. *Famine* in Cutch, Kattyawar, intense in some parts of Rajputana; *scarcity* in parts of N.W. Provinces and of Madras.
1823. Drought in Madras.
1824. Drought in Bombay.
1824. *Famine* in Madras, chiefly in the north.
1825. *Scarcity* in Bombay, chiefly in Gujerat and Northern Dekhan.
1832. Drought in the northern districts of Madras, except Ganjam; in the south of Hyderabad and the Southern Mahratta districts.
1833. Drought in north part of Bombay, in Rajputana, and parts of Panjab and N.W. Provinces.
1833. *Famine* in northern districts of Madras, intense in Guntur; *scarcity* in Hyderabad and Southern Mahratta districts.
1834. *Scarcity* in North Dekhan and Gujerat, in Rajputana, the Hissar district of the Panjab, and the trans-Jumna districts of N.W. Provinces.
1837. Drought in N.W. Provinces, eastern states of Rajputana, and south-east part of Panjab.
1838. Drought in Gujerat, Cutch, and Kattyawar.
1838. Intense *famine* in Central Doab and trans-Jumna districts of N.W. Provinces; also in Dehli and Hissar districts.
1839. *Scarcity* in Gujerat, Cutch, and Kattyawar.
1844. Scanty rainfall in Dekhan.
1845. *Scarcity* in Dekhan.
1853. Drought in Ceded Districts of Madras, in South Hyderabad, Sholapur, and Kaladgi.
1854. *Famine* in Bellary; *scarcity* in adjoining parts of Madras, Hyderabad, and Bombay.
1860. Drought in part of N.W. Provinces and Panjab, and neighbouring states of Rajputana.
1861. *Famine* in Upper Doab of N.W. Provinces, Dehli, Hissar, adjoining parts of Rajputana; *scarcity* in Cutch.
1865. Drought in northern part of Madras, in South Hyderabad, and north part of Mysore, in the S. Mahratta districts, and all W. Bengal.
1866. *Famine* in Bellary, Ganjam, intense in Orissa and Behar; *scarcity* in all adjacent parts of Madras, Mysore, Hyderabad, and Bombay, and in Central and Western Bengal.
1868. Drought in Rajputana, trans-Jumna districts of N.W. Provinces, north and south-east districts of Central Provinces, and in Panjab from Jumna to Indus.
1869. *Famine* intense in Western Rajputana, and in the trans-Jumna districts of Allahabad and Dehli and Hissar; *scarcity* in adjacent parts of N.W. Provinces and Panjab, Gujerat, Cutch, and N. Dekhan, and also in the north and south-east districts of the Central Provinces.
1873. Drought in N. Behar, and in part of N.W. Provinces and Oudh.
1874. *Famine* in Behar, and *scarcity* in the strip of N.W. Provinces and Oudh adjacent.
1876. Drought in all Madras and Dekhan, Mysore, and south part of Hyderabad.
1877. Drought in Central Provinces, N.W. Provinces, and Panjab.
1877. *Famine* in Madras, Mysore, Bombay, and Hyderabad, very intense.
1878. *Famine* in N.W. Provinces and in Kashmir; *scarcity* in Panjab.

In the famine of 1873–74, the cost to the Government of British India was Rs. 6,75,95,700, and in that of 1876–78, Rs. 11,19,43,200.

Buddhists. — The use of animal food is not absolutely forbidden to the followers of Buddha, and all of this faith in Burma use enormous quantities of fish, reptiles, and crustacea; even the more strict of them, though they may refuse to take life for food, eagerly use flesh when they can get animals killed for them, or find them dead from accident or disease; and the cow, buffalo, and horse are all eaten. The Burmese eat the

tiger, the hyæna, camel, monkey, jerboa rat, field rat, bats of kinds, flying fox, flying lemur; and amongst other creatures, the Palolo viridis or sea-worm, and Cordylia palmarum, the grub of the palm weevil, are eaten by one or other of the races in the south and east of Asia and Australia. In Burma, tiger flesh sells for five annas (7½d.) a lb. Perhaps no race in the world so largely utilize vegetable and animal substances as the Burmese and Chinese,—the great rivers which intersect the country, and the extended seaboard, providing a large supply of fish, molluscs, and crustacea.

Chinese.—The great staff of life in China is rice, which is either eaten dry or mixed with water, so as to resemble a soup. Out of rice they make their chief intoxicating liquor, which, when good, is something like strong whisky, both in its colourless appearance and its smoky flavour. Vegetables are largely consumed, such as the sweet potato, yams, millets, peas, beans, turnips, carrots, etc. Of their fruits, the orange, leechee, loquat, and mango, are much in use. Their favourite drink is tea; and the favourite animal food of the poor is pork, the taste for which is national. There is a maxim prevalent among them, that 'a scholar does not quit his books nor a poor man his pigs.' The flesh of the bullock, sheep, deer, dog, cat, wild cat, rat, and horse is eaten, but, compared with that of swine, it is a rarity. Fish are eaten in great abundance, either fresh, dried, or salted; and they rear great quantities of ducks and various species of fowl for the table. The comprehensive principle on which Chinese diet is regulated, is to eat everything which can possibly give nourishment. The luxuries consumed by the very rich consist of the edible birds' nest, beche-de-mer or sea-slug, shark fins, fish maws, cow sinews, points of stag antlers, buffalo hides, which afford the gelatinous food considered so restorative. Amongst their delicacies also are dishes made of the larvæ of the sphinx moth, and of a grub bred in the sugar-cane. In China, the various modes of catching and rearing fish exhibit the contrivance and skill of the Chinese, quite as much as their agricultural operations. According to the Repository, at least one-tenth of the population derive their food from the water, and necessity leads them to invent and try many ingenious ways of securing the finny tribes. Great bag-nets and stake-nets are in use, also hand-nets with a diameter of 30 feet, which they throw with a swing over-head; and they teach cormorants to fish and bring the prey to the boat. Amongst molluscs eaten, are the sepia, octopus, turbo, hippopus, tridacna, cerithium, arica, holothuria, species of monodonta. Amongst reptiles, turtle and their eggs, tortoises, frogs, crocodiles, iguanas; amongst crustacea, prawns, shrimps, crabs; amongst birds, all but the carrion birds, and the edible nest of a swallow. Amongst other mammals, the Chinese eat the dog and cat; they and the Japanese eat whales. When Chinese fishermen take one of the huge rhizostoma, which abound on their coast, they rub the animal with pulverized alum to give a degree of coherence to the gelatinous mass.

Dead Animals.—Many of the Dher, Pariah, Mhar, and Chuckili or leather-workers of India eat creatures that die of disease. It is said that, in S. Africa, eating the flesh of animals that have died of peri-pneumonia causes in the eater a malignant pustule, and that the virus is neither destroyed by boiling nor roasting. But, after minute inquiries throughout India, no injury seems to result from such food. In 1863, when many horned cattle died throughout Burma, of what was supposed to be the rinderpest ailment, there was a considerable amount of sickness and death from a typhoid fever; but whether eating diseased animals was the cause, was not ascertained.

Milk, butter, ghi, curds, poultry, eggs, mutton, beef and game, are eaten in some form by almost all nations in the S.E. of Asia. The adult Khassya, Garo, and Burmese wholly abstain from milk.

The extent to which vegetable food is produced in India may be estimated by mentioning that 56 per cent. of the population of British India are agriculturists, with 16 per cent. of labourers, most of whom also are employed in the fields. The area cultivated for food-crops is a little more than 1 acre for each individual in the Panjab; 0·76 of an acre in the N.W. Provinces and Oudh; in Bengal, 0·81; Central Provinces, 1·8; Berar, 1·75; Bombay, 1·4; Madras, 0·93; and Mysore and Burma, each 1 acre; and the produce of food-grain per acre is as under:—

Panjab, ...	11 bushels,	or 0·29 of a ton.
N.W. Prov. and Oudh, and Bengal, . . .	13 ,,	or 0·36 ,,
Central Provinces, . .	8 ,,	or 0·21 ,,
Berar, ...	6 ,,	or 0·16 ,,
Bombay, *ex* Sind and N. Canara, . . .	7 ,,	or 0·19 ,,
Madras and Mysore, .	11 ,,	or 0·3 ,,

In the Central Provinces, in 1872–73, the average produce of wheat per acre was in Hushangabad only 267 lbs.; Sagar, 324 lbs.; Raipur, 432 lbs.; Narsingpur, 440 lbs.; and Jubbulpur, 600 lbs.—or from 4½ to 10 bushels; and that of rice in Balaghat, 360 lbs.; Bilaspur, 426 lbs.; Bhandara, 448 lbs.; Raipur, 602 lbs.; Seoni, 654; and Chanda, 675 lbs.—or from 6 to 11 bushels. With periodically recurring famines, and a population increasing at a little under 1 per cent. per annum, the importance of increasing in India the yield of grain and fodder has become a matter for serious thought, Mr. Lawes of England having shown that in the four years 1874 to 1877 inclusive, in Great Britain, the average yield of 23 kinds of wheat (dressed corn) was as under:—

	1874.	1875.	1876.	1877.
Average bushels,	50¾	36¾	42½	42¼
Aver. weight per bushel, . . .	61⅛ lbs.	60⅜ lbs.	63½ lbs.	60·1 lbs.

Many of the ancient customs noticed in the Scriptures find illustrations in modern Eastern life. With regard to unclean and forbidden animals, Mahomedans follow generally the law of Moses, and only use animals that chew the cud and divide the hoof. They do not eat shrimps. Brahmans do not use the onion, saying it so resembles flesh; neither are the fruit of the Moringa pterygosperma or Sura kai or the radish articles of diet with Brahmans, and sugar from the palmyra tree wine is also avoided by them. Hindus eat sitting on the floor, off metal, usually brass, dishes, for the facility of purifying them by fire, but many are now using glazed china-ware, which they purify with ashes. In a large entertainment, however, leaf platters are used, made of the leaves, pinned together, of the banyan, the pulas (Butea frondosa), or the plantain leaf.

The pig, which many races avoid, is used by the Naidu Hindus of the Indian Peninsula, and by all the aboriginal races and humbler Christians. Most Hindus avoid crabs, but many eat shrimps. Eggs are eaten by many of the Hindus; and all Hindus partake freely of milk, which the Burman and Chinese in its natural state never touch. Hindus and Buddhists make food offerings to the deity, and bestow the first portion. With the Burmans the act of offering is the merit; and the quantities of food presented at the temple at Prome and at the great Shoay Dagon at Rangoon is so enormous, it is simply got rid of by being all thrown over the wall down the slope of the rock. Hindus make sacrificial offerings to the deity, the elements of sacrifice being a lamp, frankincense, camphor, and sandal-wood, which are burnt, and they eat the sacrificial offering, whatever it be. Food is often presented by Hindus to the pitri or manes of their ancestors; many of the races of Northern India, who follow Brahmanism, cook within a sacred circle, and a stranger stepping within it makes all unclean. A sect of Vaishnava Hindus will not permit a stranger to cast a look on the food they cook, nor even to look on them while eating; and every Hindu of that sect above the rank of a labouring man, eats his food dressed in a silk cloth.

It is mentioned, when describing the meal noticed in Genesis xliii. 32, that they set one for him by himself, and for them by themselves, and for the Egyptians by themselves, because the Egyptians might not eat food with the Hebrews, for that is an abomination to the Egyptians; and so, amongst the Hindus, different castes will not even eat food cooked in the same earthen vessel. If a person of another caste touch a cooking vessel, it is thrown away. Similarly, in Genesis xliii. 34, it is mentioned of Joseph that he sent messes unto them from before him; and this is still the method among some Hindus. The dishes are not placed on the table, but messes are sent to each individual by the master of the feast, or by his substitute. Feasting is everywhere in the East a great social duty, in the manner described 1 Kings i. 9. Food is eaten with the hands, as in Matthew xxvi. 23; and after meals, hand-washing, as in 2 Kings iii. 11, and Matthew xv. 2, Mark vii. 5, Luke xi. 38.—*Eng. Cyc.; Powell; Annals, Indian Admin.* xii.; *Hunter's Rural Bengal; Crawfurd, Dict.; Dr. Cornish on Dietary; Ward, Hindoos; M. E. J. R.; Fortune's Residence in China; Robinson's Travels*, ii. p. 132; *Tomlinson; Hassall; Statistique des Cereales de la France, par Morcau de Jonnes, quoted by Simmonds.* See Agriculture; Fish; Famine; Husbandry.

FOOL-SOLA. BENG. *Æschynomena aspera.*

FOONG-HANG, the Chinese phœnix, a head ornament worn by Chinese ladies, composed of gold and jewels, the wings hovering, and the beak of the bird hanging over the forehead on an elastic spring.

FOOT.

Kadam, .	ARAB., HIND.	Pie, ...	SP.
Pied, ...	FR.	Kal, . . .	TAM., TEL.
Fuss, ...	GER.	Ayak, ...	TURK.
Piede, ...	IT.		

The foot in most oriental countries is deemed the humblest part of the body. It is alluded to in 1 Kings ix. 9, where the Hebrews are mentioned to 'have taken hold of other gods.' When a person claims the protection of another, he casts himself down before him, and lays hold of his feet; and the expression is commonly used, though a person may not prostrate himself, 'I have taken hold of your feet;' 'I will not leave your foot.' When a person is called into the Burman monarch's presence, he is said to go to the golden feet; and a son writing to his parents will add that he kisses the feet of his mother.

Several oriental nations — Buddhist, Hindu, Christian, and Mahomedan — have marks on rocks, which they believe to be imprints of the feet or of the foot of people whom they reverence, such as that on Adam's Peak, Ceylon, or of Mahomed at the Kadam Rasul Hill near Hyderabad. St. Augustine, when landing at Thanet, is said to have left the prints of his foot on the rock. One foot-print is shown as that of Jesus, in a small circular chapel covering the stone which bears the foot-print, on the summit of the Mount of Olives. The ancient Mexicans showed one of the god Tezcatlipoca, and the people of Samoa, one of the Navigator's Islands, showed one of Tiitii.—*Peschel; Frere, Antipodes*, p. 237.

FOOTBALL.

Khyay-lor, . . .	BURM.	Ballone, ...	IT.
Ballon, ...	FR.	Pelota, ...	SP.

Football is a favourite game with the Burmese, Malay, and Papuans. In Burma it is woven of rattan, hollow and elastic. The player keeps it dancing a little while on his foot, then occasionally on his arm or thigh, till suddenly he gives it a good blow with the hollow of his foot, and sends it flying into the air. Another player runs to meet it, and at its first bound catches it on his foot, and plays in his turn; six or eight young men form a circle. It must not be struck with the hand, but only with foot, ankle, knee, elbow, shoulder. The game needs agility, skill, and practice. Malay players stand in a circle, larger or smaller according to the number engaged; a ball made of split rattans, hollow, and about 6 inches in diameter, is thrown up by one; the person to whom it approaches receives it on the instep of his foot, and throws it into the air towards his nearest playmate, who in like manner sends it on to the next, and so on. With expert players it is thus sent round from one to another an extraordinary number of times without falling; sometimes one player will himself, particularly when there are many onlookers, keep the ball in constant motion, receiving it in the fall, now on his foot, now on his knee, elbow, head, shoulder, etc. The ball is a perfect sphere, and is so light, it may be thrown almost with full force against any fragile object without causing injury. The introduction of this plaything into Europe would be a great matter in households.—*Jour. Ind. Arch.* v. No. 11.

FORAS. PORT. Fora, without. In Bombay, waste land adjacent to cultivated land. Foras and Pertenças Dependencies.

FORBES, JAMES, author of Oriental Memoirs, a Narrative of Seventeen Years' Residence in India, London 1834; Illustrations to Oriental Memoirs, with Explanatory Notices, London 1835.

FORBES, MAJOR, author of Eleven Years in Ceylon, comprising sketches of the Field Sports and Natural History of that Colony, and an Account of its History and Antiquities, 1840.

FORBIDDEN MEATS, or unclean meats, have been amongst almost all races, many of the prohibitions being of the most fanciful kinds. The animals which the Hebrews were ordered to avoid are enumerated in Leviticus xi. and Deuteronomy xiv., viz. blood, animals dying of disease or killed by wild animals, camel, hare, bat, coney, swine, fish without fins or scales, eagle, ossifrage, osprey, glede, kite, vulture, raven, owl, cuckoo, hawk, night-hawk, swan, pelican, gyr-eagle, cormorant, stork, heron, lapwing, creeping things which fly. Mahomedans adhere largely to the above. They abstain from the animals that do not chew the cud, and divide the hoof; also from scaleless fish and from prawns. Many Brahmans and many Hindus do not eat animal food of any kind, and abstain even from onions from their flesh-like consistence; as also from fowls and their eggs. The Garo and Khasya hold milk in detestation.

The Chinese and the lower castes of India are almost omnivorous; and Burmans, who are Buddhists, though they will not kill creatures for food, eat any creature which others kill, and eat almost every grain and vegetable. See Food.

FORESTS.

Forêt, ... Fr.	Biaban, ... Pers.
Forst, Wald, . . Ger.	Floresta, Selvosa, . Sp.
Jangal, ... Hind.	Orman, ... Turk.
Foresta, Rosco, . It.	

Drs. Roxburgh, Royle, Wallich, Gibson, and M'Clelland, for many years continuously, during the earlier part of the 19th century, urged the necessity for attention to the forests of India and Burma. A vast extent of forest land in Oudh, situated on the east side of the Kerrowlee river, was described by Dr. Royle as holding out the prospect of very valuable supplies by the year 1850, provided that means were adopted for preventing wanton destruction, and of allowing the young plants to grow up and supply the place of those which are cut down. Dr. Wallich drew attention to the forests then occupying the islands of the Gogra, commonly called Chandnee Choke. He represented them as in every way deserving of being preserved for the use of Government, and protected from destructive depredation. The sissoo and sal forests of the Dehra Doon were also recommended to be preserved, being as important for the stations in the north-west of India, as the forests of Oudh and Gorakhpur are for those in the south.

Dr. Gibson unceasingly advised the Bombay Government to preserve their forests, and to form plantations of hardy trees; Mr. Dalzell's efforts to preserve the Sind forests were untiring; in 1840, 1848, and 1878, Surgeon-General Balfour advised arboriculture.

In 1850, the British Association at Edinburgh appointed a committee to report on the probable effects of the destruction of tropical forests, and the report was presented the following year, 1851, at their meeting at Ipswich. A year afterwards, forest conservancy establishments were sanctioned for the Madras Presidency and for British Burma, and by Act VII. of 1865, the Government of India issued forest rules and penalties.

The forests of India had up to that time been injured by the fires of the kumari cultivators and cowherd races, and by reckless felling of wood merchants; whilst no systematic efforts were adopted to preserve or restore. Kumari cultivation has since been prohibited, the firing of forests to obtain fresh grass for cattle has been prohibited, and fire-paths formed, 40 to 50 feet broad, to cut off the fires. Great forest tracts have been reserved, new plantations formed, and seed dibbled in amongst the mass of vegetation.

The report of the committee had reference chiefly to the influence of forests on the climate and productiveness of a country; and it is now acknowledged that the indiscreet destruction of the forests of any country is apt to bring upon future generations three calamities,—the want of fuel, the want of water, and the want of timber; while the appropriation of forest land for purposes of cultivation would not benefit the revenue, as regards climate, the interests of agriculture, the progress of commerce, and the general prosperity of a province, doing so would gradually lead to the most serious consequences. Not only is the rain that falls economized and prevented from rapid evaporation, but the water which sinks into the ground is being continually pumped up from great depths by the roots of the trees, and exhaled by the leaves, thus actually moistening the neighbouring atmosphere in the driest weather, and benefiting the crops of the neighbouring fields. In passing through a tamarisk jungle early in the morning, even in the driest weather, the whole of the foliage is found dripping,—not from dew, but from the water of exhalation brought up from great depths by the vital processes of vegetation; the whole of this passes into watery vapour in a few hours. If forests be cleared away, the neighbouring fields become exposed to the violence of parching winds, and liable to be covered with drifting sand, while cattle find no grazing and no shelter from the scorching heat.

The Sunderbun tract, extending over 3000 square miles, is a dismal swamp, growing timber trees and underwood, its most valuable tree being the Heritiera littoralis. The western coast of the Peninsula of India, the country above the ghats in Canara, the Animallay and Pulney Hills, have famous forests, and Malabar teak has always been remarkable for its superiority to that of other places, and with which the dockyards and ordnance department was long supplied. The forests to the eastward of the Salwin river, in Martaban, when visited by Dr. Wallich, were very favourably reported on, for the supply of splendid bamboos as well as of teak, for the extent of the forests, the size of their timber, and the facility of procuring it. Subsequently, Dr. M'Clelland reported in the forests of Pegu and Tenasserim, 85 species of soft *white wood*, many of them valuable either for their fruit, gums, oil-seed, or spices; others, for their close and compact structures, are employed in the manufacture of small ware, as a species of Nauclea used for making combs, and two species of Erythrina yield the light charcoal employed in the manufacture of gunpowder. These light woods, useless as timber, belong to the families Urticaceæ (including more than 20 species of Ficus) and Sterculiaceæ, Laurineæ, Rubiaceæ, Myristicaceæ, Anonaceæ, Spondiaceæ, and Bignoniaceæ, with odd species from other families. Of the remaining white woods, 25 in number, valuable for their strength and closeness of grain, 17 of them were thought fit for house-building, and 8, from the hardness and fineness of their

grain, render them valuable as fancy woods for cabinetmaking. He found 25 *red-coloured woods*, 7 of which, from their strength and solidity, adapted for the various purposes of house-building; 7, from the elegance of their grain and colour, are suited to the various purposes for which mahogany is used, and 11 are suited to the finer purposes of fancy cabinet work. *Yellow woods*, 3 in number, hard and fine-grained, suited to fancy purposes. There are 12 dark-brown woods, all valuable, 11 of them adapted for house-building, and probably for ship-building, and one for special purposes requiring great strength and hardness *Black woods* consist of 4 different kinds, all of which are valuable for their strength and hardness. There were 7 varieties of *light-brown wood*, coloured wood embracing all the timber of most value in the province, exclusive of teak.

In British Sikkim are 105,004 acres of forest, and there are also forests in Assam, Dacca, Chittagong, Cuttack, Palemow, and the Rajmahal Hills. In British Sikkim and the Dwars of Bhutan are large tracts of sal (Vatica robusta). The higher slopes of the Darjiling district above 6000 feet have been reserved; plantations of temperate and sub-tropical trees have been formed, and several thousand mahogany trees were planted in the Terai. Forest tracts of the N.W. Provinces are in Kamaon, Garhwal, Meerut, Rohilkhand, Gorakhpur, and Jhunsi. In Kamaon and Garhwal, the total area surveyed was 406,134 areas, of which more than nine-tenths were covered with the cheer or stone pine. The Government forests in Gorakhpur cover an area of 127,527 acres, 116,384 of which are occupied by sal trees, with an average of 25 to the acre. About 400,000 acres of Garhwal and Kamaon are covered by the Pinus longifolia, bearing about 15 trees to the acre.

The *Oudh forests* are in three districts. The first, or Khirigurh district, lies between the rivers Sohali and Mohana. The area is 263 square miles, of which 149 square miles produce sal; but the trees here in 1868-69 were not large enough to produce logs of timber. The second, or Baraitch district, the countries between the rivers Kerrowlee and Girwa, is partly covered with sissoo forest and partly with a dense jungle of a variety of trees. The forest area is 170 square miles, of which 100 produce sal. Eight trees are reserved, viz. Vatica robusta, Dalbergia sissoo, Cedrela toona, Diospyros melanoxylon, Conocarpus latifolia, Terminalia tomentosa, Acacia catechu, and Nauclea cordifolia, sissoo, toon, and ebony. Other forest trees of Oudh are, Ægle marmelos, Ailanthus excelsa, Bassia latifolia, Eugenia jambolana, Feronia elephantum, Melia azederach, Mimusops elengi, and Terminalia bellerica.

The *Panjab* forests on the banks of the five rivers are of great value, and the deodar forests of the rajas of Chamba and Bassahir are available for the Indian Government. The northern limit of the sal is on the banks of the Beas in the Kangra valley.

In the arid tract of Sind and the Panjab, forests of babul (Acacia Arabica) line the Indus at various points, which, in Middle and Upper Sind, are mixed with tamarisk and the Euphrates poplar; while jhund or kundi (Prosopis spicigera), an acacia-like tree, salvadora, and an arborescent leafless caper (Capparis aphylla), occupy vast tracts in rear of the babul forests. The dry belt of the Panjab has woods on the high land between the rivers, composed mainly of prosopis, salvadora, and capparis.

The woodlands of a portion of Rajputana are mainly composed of a beautiful tree, a species of Anogeissus, with small leaves and drooping branches.

Sandal-wood grows in the S. dry belt of Mysore.

Outside the arid zones, the teak grows in the mountain tracts and west coast of the south of India, where also grow the blackwood trees, poon spar trees, angely, vengay, and irul; and the sal (Vatica robusta) grows in the extensive forests at the foot of the Himalaya, in forests in the Rewa territory, the eastern part of the Central Province, and the adjoining districts of Bengal.

The moist belt along the Himalayan range to Burma and Tenasserim, and that along the western coast of the Peninsula of India to the top of the ghats, is covered with luxuriant evergreen vegetation. In the Himalaya are the forests of pines and firs. The deodar has its eastern limit in Kamaon, but is succeeded by other coniferous trees, one of which, the Pinus Khassyana, extends into Burma. The Ficus elastica, yielding caoutchouc, is found along the foot of the Himalaya from Sikkim to Assam, and more sparingly at the foot of the Khassya and Cachar Hills. Assam also has the Mesua ferrea, Artocarpus chaplasha, and Lagerstrœmia reginæ.

In Burma there are extensive forests of Pinus Khassyana on the high mountains, large teak forests between the Salwin and Sitang, and magnificent evergreen forest vegetation in the moister valleys, where trees grow to a height of 200 feet.

Forests in British Burma cover 4,480,000 acres, out of a total of 60,000,000 acres. Of this the teak forests take up 1,534,000 acres; and forests devoid of teak, but in similar localities, 2,945,920. The richest in teak are on the hills between the Irawadi and Sitang. The destruction of the forests of Acacia catechu has been reckless. Burma also yields the Xylia dolabriformis. Teak plantations were commenced in 1856 on the river above Rangoon, and on the Sitang near Tounghoo, intended to extend to 30,000 acres.

In Kamaon and Garhwal, the characteristic trees are the chil (Pinus excelsa) and the chir (Pinus longifolia). Below lie the great sal and bamboo forests, which have been much worked, but there is still much timber near the Kosi and Ramganga rivers.

The deodar forests of Gangotri and Jaunsar, N. of the Dehra valley, near the sources of the Tons and the Bhagirathi, the last leased from the Tiri raja.

In Gorakhpur, sal is the characteristic tree, mixed with terminalia and acacia.

The deodar forests are in the valleys of the Sutlej, Beas, Ravi, Chenab, Jhelum, and their tributaries. The forests of the Chamba and Bassahir states are leased by the Government of India. The rakhs or preserves in the Panjab Doabs, between the rivers, consist of about 8000 square miles. Plantations of sissoo and kikar have been formed at Changa Manga in the Bari Doab, 44 miles below Lahore; also on the Jhelum near Lodhiana, and near Dehli and along most of the irrigation canals.

In Oudh, the forests in the Kheri, Gonda, and Bharaich districts are strips cut off from the

Nepal forests on high ground along the Nepal frontier. They consist of sal, terminalia, and conocarpus, interspersed with open glades of grass land.

In the Central Provinces there are great tracts of jungle, but only a small part properly forest. The hills between the Narbada and Nagpur, though covered with trees, contain little timber of value. In the Central Provinces, 2880 square miles of forest tracts have been reserved, 11,000 square miles remain unreserved, and there are 10,000 square miles of timber tracts belonging to private individuals. The teak in the forests of the Mandla district, at the head of the Narbada river, has been ruthlessly felled. Thence to Raipur are extensive sal forests; and the Dela Kari forest near Pachmari is the most westerly position of the sal tree in Central India. But further west are remnants of the teak forests of Baitul and Hushangabad, from which the cities of Ujjain, Indor, and Malwa were built. The vast forests to the eastward, the magnificent teak along the Godavery, and the great sal belt around Chatisgarh, extend across the centre of India from the head of the Narbada to Cuttack.

In Berar are 646 square miles of reserves. Mysore and Coorg have three great forest belts, —the evergreen on the Western Ghats, yielding angely, poon, ironwood, and blackwood; a moderately moist belt from 10 to 40 miles wide, on the eastern slopes of the ghats, yielding teak and sandal-wood; and a dry region on the eastern side of Mysore, on which grow the Hardwickia, Terminalia, and Conocarpus. In Mysore the reserves are 398 square miles. In Coorg there are 347 square miles, besides the Devada Kadu, or sacred forests.

Forests of Bombay Presidency extend for 500 miles, from Canara in the south to the Mahi river in the north, in the districts of Canara, Tanna, Kolaba, and Kandesh, the best tracts being near the line of ghats.

The forests of Sind, called Beyla, cover 352,460 acres. They were originally hunting-grounds of the Amirs. They are dependent on the inundations of the Indus, without which they would disappear.

In the Animallay forests of Madras there are reserved teak forests. The Conolly teak plantation on the Beypur river was begun in 1844. The teak seed is steeped in water for 48 hours, and sown on raised beds of fine mould covered with straw, to prevent too rapid evaporation; they germinate in 10 or 12 days, and in the interval are constantly watered. At Mudumalli a plantation of 20,000 teak trees was formed in 1865.

Australian gum-trees were introduced into the Neilgherries about 1850.

Sandal-wood planting has been tried with success in Cuddapah and Kurnool districts, and in the Segur and Collegal ranges of Coimbatore. The sandal-wood tracts belonging to the Government are confined to certain portions of the Coimbatore and Salem collectorates. The tree is often found in hedgerows and low scrub jungle, etc., but is seldom seen in any regular forest. Up to a few years ago, sandal-wood was considered a Government monopoly,—at least none of the ryots ever asserted a right to fell it when found in even their own fields and hedgerows; but upon a subcollector of the Salem district raising the question, the Government waived any claim to the trees, and they are now generally sold standing by the ryots, to merchants, etc., for a merely nominal sum. Sandal-wood planting has been successfully tried in the Cuddapah and Kurnool districts, and in the Segur and Collegal ranges of Coimbatore. South Canara is held to be a promising field for the extension of the experiment, as the tree is indigenous in portions of that district. Blackwood and catechu trees have been largely planted in S. Canara, and much success has attended the formation of plantations of the babul, casuarina, red sanders, and Pithecolobium saman plantations, the latter being a Central American tree, esteemed very valuable for fuel, the seed of which was obtained from Ceylon. Much has been done for the extension of fuel reserves and plantations, in view of the railway requirements, and too much importance cannot be attached to the addition to the Conolly teak plantations in Malabar, which are an established success. Teak planting is under trial in Kurnool, the Animallays, Bolumputty, Mudumalli and its western vicinity, in the Cumbum valley of Madura, and in South Canara, and the results hitherto obtained are very promising.

The area of the conserved forests of the Madras Presidency is supposed to be more than 5000 square miles. The area of reserves and plantations for railway fuel is about 6200 acres, estimated to yield 67,000 tons of firewood annually; and the area of teak, sandal-wood, etc., plantations is about 2500 acres. From 1860-61 to 1874-75, the balances of receipts and charges ranged from a debit Rs. 59,380 to a credit Rs. 4,28,640, the annual average profit for the period being Rs. 1,11,518.

The reserved Government forests in the Nullamallays district are at an elevation of from 2000 to 2500 feet above the sea, and contain some of the finest blackwood timber in the world. The Cuddapah forests comprise the whole of the forests on the hills and plains on both sides of the N.W. line of railway running between Triputty and Cuddapah, and are estimated to cover 250 square miles; reserves were established in the districts of Cuddapah and North Arcot, in addition to a large plantation at Ghooty in the Bellary range. The working season in the Animallays lasts from June to November, during which time the forests are almost entirely covered with a dense undergrowth of grass, often growing to the height of ten feet, and swarming with wild beasts and elephants. For the other six months of the year work is impossible, owing to the malaria causing severe jungle fevers. The woodcutters very often refuse to work on account of the large number of tigers and elephants, which prove a source of endless annoyance. These forests are the finest in India, and should be placed under a very strict conservancy system.

The forests of Mysore are those of Bilikal in Kankanhalli, and Singapore, Mavakal, and Kachanhulli in Ashtagram, and in 1878-79 had an aggregate area of 442 square miles. Of sandal-wood, 1009¼ tons were sold for Rs. 3,89,335, and the sales of timber and bamboos produced in 1875-76 Rs. 71,932, in 1878-79 Rs. 34,757.

The aspect of *Coorg* presents an entire forest; the long and narrow valleys cultivated within it serve but to render the vast woods more striking. The whole of the eastern boundary presents a

remarkable line of demarcation, exhibiting an almost uninterrupted and impervious wood from the Burmagherry Hill till reaching the Cauvery; this space is wholly uninhabited. Advancing westwards, the wood decreases in density as the country improves in cultivation, and becomes gradually thinner till reaching the Western Ghat, the immediate summits of which, naturally bare of wood, are clothed with a luxuriant herbage.

In 1881 there were 16,246 square miles of forest and fuel reserves in Bengal, Berar, Burma, Hindustan, and the Panjab; the Panjab had 15,000 square miles of rakh or preserves in its various districts, and there are leased forests in Berar, Bombay, Garhwal, Tehri, Madras, and Panjab.

Under Act vii. an order was issued prohibiting felling of forests at an elevation of 6000 feet or upwards. In 1879 the Panjab Government issued regulations to protect the Hazara forests, providing for their management, grazing, cutting timber within the reserved area, and the creation of village forests, the district officer being empowered to set apart certain areas of the village waste for this purpose. Such areas are the crests and slopes immediately below the crests of hills, the catchment basins of rivers, all steep and rocky slopes and other waste lands, of which the clearance is, in the opinion of the district officer, unadvisable. And in the case of other kinds of lands, a majority of the landowners, representing two-thirds of the revenue, may apply to the deputy-commissioner to have a tract set apart as village forest. Squatting, breaking up the soil, cutting trees or brushwood, barking trees, or grazing cattle contrary to the general orders, removing dead leaves or kindling fires, are prohibited within a village forest. Also the district officer can require the owner of any cultivated land on a hill-side to take the necessary step for ensuring the stability of the soil; and also, in case of erosion of a river's banks, or of risk of torrent action, or of the occurrence of landslips, to enclose and plant the necessary area in such manner as most effectually to guard against the threatened danger. The areas so enclosed are to be regarded as a reserved forest, and the owner is to be compensated as though it were taken up for a public purpose.

The forest's wild products vary in different parts, but honey, wax, roots, fruits, gall-nuts, ginger, turmeric, cardamoms, dye-powder, resin, and various fibres are obtained yearly from the forests of the Madras Presidency. Cinnamon bark, cinnamon flower, resins, gall-nuts, and bamboo sprouts, in Malabar. The most valuable of these products is cardamom; but a large quantity of this spontaneous crop is never gathered, and all efforts to collect it are failures, as the jungles are uninhabited by human beings, and wild animals take shelter in them. Cinnamon bark and flower are procured, the former by stripping the trees, and the latter by plucking the flowers when in blossom. Nagabetta (a species of cane) is carried away in large quantities by wayfarers and pilgrims frequenting the temple at Subramania, where they grow largely. The Government of Madras have repeatedly declared that they will not sanction any step in the direction of monopolizing the forest products, the collection of which affords the only employment and means of subsistence open to the inhabitants of wild forest tracts.

The gross revenue derived from the Indian forests, in the ten years 1872 to 1881, was £6,204,977, and the charges £4,207,554. The importance of forests to tropical climates, as inducing rain and preserving surface-water, is recognised. The extensive clearing of a country diminishes the quantity of running water that flows over it. Rain oftener falls, and more dew is deposited, in well-wooded countries than when a country is naked; mountains, when covered with their native forests, gather clouds around their summits, condense the humid particles of the air, and equalize the fall of rain; lands destitute of the shelter of trees allow of a more rapid evaporation; forests preserve the surface-water, and husband and regulate its flow.—*Royle's Productive Resources of India; M'Clelland; Cleghorn in Year-book of Facts*, p. 203, of 1868; *Scindian*, July 12, 1856; *Annals, Indian Administration*, March 1861.

FORMICIDÆ, an extensive family of Hymenopterous insects, belonging to the section Aculeata, sub-section Heterogyna, *Latreille*, comprising the numerous tribes of ants. The family is distinguished by the wingless state of their abortive females, by the great length of the basal joint of the antennæ in the females and the neuters, in which they are elbowed at the extremity of this joint, and by the first or the first and second joints of the abdomen being knotted; the upper lip of the neuters is large, horny, and perpendicular, falling between the jaws; the eyes are rounded, or oval and entire, the form of these organs varying greatly in many of the species. In their structural character the Formicidæ resemble the Tiphiæ and Daryli belonging to the section of the sand-wasps. The neuters are smaller than the males, and these are smaller than the females; the abdomen in the first and last of these sexes is composed of six segments, in the male of seven. The females and neuters are furnished with a sting in many of the species. Those species which have stings emit an irritating fluid into the wounds which they make, while the stingless species discharge a red transparent fluid on to the skin, causing painful blisters. The various genera of this family, according to Latreille, are:—Formica, Polyergus, Ponera, Myrmica, and Atta. This last genus differs from Myrmica only in having very short palpi; the head of the workers is generally very thick. The *3d Tribe Formicites* contain those ants that have no sting, and the abdominal pedicle is of one knot only. It comprises two genera, Polyergus and Formica. The Formica genus is distinguished by having the footstalk of the abdomen composed of a single joint, the mandibles triangular, and denticulated at the edge. The females are destitute of a sting. The neuters are about one-third of an inch long, of a black colour, with the thorax, abdominal scale, and a large part of the head red. It makes its large conical nest in the open ground in woods, etc., amassing together large quantities of sticks, straws, etc. Dr. Jerdon notices in India F. ammon, angusticollis, assimilis, carinata, cinerascens, compressa, hastata, indifessa, longipes, nana, phyllophila, relucens, rufo-glauca, sex-spinosa, smaragdina, timida, vagans, velox, stricta, and sylvicola. The fondness of F. indefessa, *Sykes*, for sweet substances is very great. F. gigas is more than an inch long.

F. compressa, *Fabr.*, well known as the black ant, is found throughout every part of India

except the western coast. It lives in very numerous societies in the ground, the entrance to the nest being often round the trunk of a tree, or close to some building. The warriors are very numerous. Their food is chiefly vegetable secretions, sugar, etc., and Colonel Sykes has given an interesting account of the devastations committed by them on preserves, sugar, etc. They bite rather severely, but the pain is quite momentary. At certain times great numbers of the winged males and females are seen at the mouth of the nest, and they remain there for several days. When they take wing, they do so in vast numbers, and always at night.

F. smaragdina, *Worker*, the red ant of India, Dimiya, SING., of a uniform pale rufous. Male of a rufous colour. Female of a pale shining green colour. The red ant is well known in Malabar and the wooded parts of India, but is rare in the Karnatic. It forms a nest of living leaves, which it draws together without detaching from the branch, and unites with a fine white web; sometimes this nest is above a foot in diameter, but usually smaller. The society consists of a vast number of individuals, and in large nests are many females and males, both with and without their wings at all times of the year. They are very bold and pugnacious, and bite very severely. They live chiefly on vegetable secretions, and are very partial to the flowers and buds of some of the loranthi, which abound on the western coast. They often form a temporary web round the flowers, or sometimes round the fruit, of various trees, viz. the Eugenia Malaccensis, Artabotrys odoratissima, etc., apparently only for the purpose of feeding undisturbed. They will, however, also sometimes feed on decaying animal matter. It is said that the web they form is occasionally used for writing on in the N.W. Provinces of India, and that these ants are made use of to destroy a nest of wasps that may have established themselves in a house. They are said to destroy all the wasps, but to become so infuriated, that their own indiscriminate attacks are nearly as bad as those of their foes. In gardens they are most partial to mango trees, but in the jungles they make no selection.

F. timida, *Jerdon*, the small red ant, has all the body covered with long scattered hairs; only found on the Malabar coast, where it is very common, living chiefly on vegetable secretions. It has its nest under ground. It is timid, if approached or touched, dropping to the ground at once and hiding itself. On one occasion pigeon squabs placed in a room on the floor were found killed by these ants, chiefly, however, the warriors.

F. velox, *Jerdon*, colour blackish, abdomen greenish pubescent. Very common in Malabar, and also found in the Karnatic. It frequents flowers, especially delighting in those that have great quantities of pollen, such as the Cucurbitaceæ, Hibisci, etc. It runs very speedily, and is very easily alarmed, dropping to the ground on being touched. See Ants; Insects.

FORMOSA or Pahan Island, called also Tyoan, is about 210 miles in length from N.N.E. to S.S.W., its south point, called the Cape of Formosa, being in lat. 21° 53¼′ N., long. 150° 53¾′ E. It is 20 to 80 miles wide, and is traversed down its centre by a mountain range, which rises to 8000 feet in the south and 12,000 feet in the north half; the valleys and higher slopes are clothed with trees. As yet only 35 species of its mammals and 128 of birds are known, several of them identical with the species of India and Malay Peninsula; 43 of its land birds are peculiar to the island. Formosa is part of a chain which lies along the Asiatic continent, and forms a distinct and well-defined ethnic and geographic group, which includes all the Japanese and Aino islands from Formosa to Kamtschatka; and Mr. Logan proposed to call it Aino-Japanesia. It was known to the Chinese A.D. 1431. It was held by the Dutch for a short time. The western coast is occupied to a great extent by recent settlers from China, but the interior is inhabited by several rude tribes, whose language differs from the known Formosa. The aborigines, called Kebalan, are short in stature, of tawny complexions, and lank hair. Although inhabiting a great and fertile island, affording to all appearance a fair opportunity of development, they have never made any progress in civilisation, and at present seem to live in a state of barbarism. The language of Formosa, according to M. de Rosner, appears to be a branch of the Oceanic, which, however, belongs to a state intermediate between the monotonic and the inflectional; words of the Malayan languages are to be found in the language of the aboriginal inhabitants. In the north-western portion of the island sulphur mines are frequently met with, presenting blots in the otherwise beautiful scenery. The gigantic laurels from which the camphor is obtained are found on the mountains in the possession of the aborigines. In the neighbourhood of Tamsuy alone, 800,000 lbs. of this valuable commodity are produced annually. Petroleum also adds to the riches of the island, which, both from its natural and artificial products, is well worth a struggle on the part of the Japanese to obtain, and on the part of China to defend. Aralia papyrifera in Formosa does not exceed 6 feet high. Formosa Pheasant is the Emplocamus Swainhoii.—*Ind. Arch. Supp.* ii. pp. 318–358; *Japan*, 410; *Loo-choo; Horsburgh; Latham's Descriptive Ethnology; Adams; Cornhill Magazine; Jour. Ind. Arch.*; *Marryat's Ind. Arch.* p. 41; *Dr. Collingwood, Trans. Ethn. So. N S.* vi. p. 139; *A. R. Wallace.*

FORREST, CAPTAIN THOMAS, author of Voyage to New Guinea and the Moluccas from Balambangan, in 1774-76, with a Vocabulary of the Magindano Tongue, Lond. 1780.

FORSKAL, PETER, a native of Denmark or Sweden, who travelled in Arabia and Egypt, and wrote the Flora Ægyptiaca, Arabica, and other works.

FORSTER, GEORGE, an early traveller from India to Europe. He proceeded by land from Bengal to the Caspian Sea, and from thence by the ordinary route on the Volga, etc., to Petersburg, in the year 1784. He avoided the country of the Sikhs. He wrote Journeys from Bengal through Kashmir, Afghanistan, Herat, Persia, Petersburg, etc., to England, Lond. 1808.

FORSYTHIA VIRIDISSIMA, a beautiful flowering plant of China; it blossoms in spring-time. Forsythia suspensa, *Smith*, Lien-k'iau, CHIN., is obtained in Shen-si and other Chinese provinces; the fruit, leaves, and root are used medicinally.—*Smith.*

FORT GEORGE, the fortress of Bombay. Fort

Gloucester, a fort now in ruins, is on the left bank of the Hoogly river, about 15 miles below Calcutta. Fort Golconda, a fortress on a rocky hill on the left bank of the Seena river, five miles W. of the city of Hyderabad in the Dekhan; its builder is not known. It consists of an enceinte, with bastions and a citadel. After a siege of seven months, it fell by treachery in the end of September 1687. Fort St. David, a place in the Karnatic at Behoor; between it and Pondicherry, Major Lawrence, in August 1752, entirely defeated the French army. Fort St. George, the fortress at Madras, built on the principle of Vauban. Fort Victoria, the name given to Bancoote, after its surrender to Commodore James on the 8th April 1756. Fort William, the fortress of Calcutta; it was constructed by Lord Clive.

FORTUNE, ROBERT, a scientific horticulturist, who collected many rare plants in China, in the middle of the 19th century; obiit 1880. His first voyage was made in 1842, for the Horticultural Society of London. During four years' wandering, he discovered several new useful and ornamental plants, which now add to the beauty of many an English garden. He was in 1848 deputed by the Court of Directors of the East India Company, and upwards of 20,000 tea-plants, eight first-rate manufacturers, and a large supply of implements, were procured from the finest tea districts of China, and conveyed in safety to the Himalaya. This journey occupied altogether about three years, and he returned to England at the end of 1851. He was deputed again in 1852, for the purpose of adding to the collections already found, and of procuring more tea-makers. He was occupied in this undertaking for nearly three years, and the result of his mission was considered very satisfactory. His fourth voyage was made in the service of the United States Government, to procure a very large supply of tea-plants, for trial in some parts of the American Union, and other choice productions desirable to introduce. He wrote Residence in China, and Wanderings in China.

FOSSILS. Copal occurs fossil along with lignite in the tertiary beds of the Malabar coast near Travancore, and on the east coast of Africa. It was first found in the blue clay at Highgate, near London; it occurs also at Wochlow in Moravia. It occurs in irregular pieces or small nodular masses. Its colour is yellowish or dull brown, nearly opaque; lustre resinous; fracture conchoidal; sp. gr. 1·046. When heated it yields an aromatic odour, and melts into a limpid fluid; it burns with a yellow flame and much smoke. When strongly heated in contact with the air, it is totally dissipated.

Fossils are very abundant in Southern Asia, all along the seaboard; west of Pondicherry, and near Trichinopoly; in Hyderabad and the Central Provinces; in the valley of the Nerbadda, in all the coal tracts, in the Siwalik Hills, and in Burma. Of those found in Burma by Mr. Oldham during his companionship with the embassy, he notes the following:—elephant tusk and lower jaw; mastodon lower jaw and molar tooth; rhinoceros tooth; tapir lower jaw; deer; sus or merycopotamus, portion of cranium; garial fragments; bones of the pachydermata, ruminants, crocodile, tortoise, large tortoise.

Sir Proby T. Cautley carried on extensive researches in conjunction with Dr. Falconer, in the fossil remains of the Siwalik Hills. They presented to the British Museum an extensive collection of fossil mammalia from the Panjab Siwalik. At Cutchavelly, north of Trincomalee, is a bed of calcareous clay, in which recent shells and crustaceans, principally Macrophthalmus and Scylla, are found in a semi-fossilized state. The breccia at Jaffna and the arenaceous strata in the western coast of Manaar and the neighbourhood of Galle also contain recent shells. These fossils, when powdered, are used by the Arabs as a specific for diseases of the eye. The saligramma which the saiva and vaishnava Hindus worship are fossil water-worn ammonites, found in part of the Gandak river in Northern India. The bin-lung, rori, and choolia stones found in the whirlpools of the Nerbadda and Chambal rivers are also worshipped by Hindus; but they are not fossils, merely stones rounded by attrition. Numerous fossils are obtained in the Baloti range and in the Shaikh Booden Hills, which may be considered offshoots from the Salt Range. Fossils also occur in the Lagari, Mazari, and Lower Hills of the Sulimani range. A species of echinus is found fossil in the Lagari Hills, Imam Bakhsh Khan, and Dehra Ghazi Khan, and the curious trilinear markings on it are compared by the people to the impression of a bird's foot, to which accordingly they attribute the origin of these fossils. The natives regard the larger fossils of the Mazari Hills as the petrified clothes of fifty betrothed virgins, who, while bathing, were surprised by their future husbands. They prayed Heaven to grant them a covering; in answer to this the earth swallowed them up, and their clothes became stones. In the Panjab, a fossil encrinite is used in medicine, under the name of Sang-i-yahudi, or Jew's stone; and the Sangcha, a nummulite from Dehra Ghazi Khan, and Sang-i-shad-naj, another nummulite, are also used in medicine.

The Dehli system of hills includes those of the Dehli, Gurgaon, and Hissar districts, also the Shekawati Hills in Gurgaon, which ultimately become fused in the Aravalli range. Some of these hills are fossiliferous, others yield metals, the copper of Hissar and Singhana in Gurgaon district belonging to this series. In other portions marbles and freestone are found; and the Kalyana Hills of Dadri, now included in the Jhind territory, furnish elastic (micaceous) sandstone.

Spiti yields ammonites, astarte, belemnites, species of nucula, othoceros, pholadomya, rhynchonella, and spirifer.

The Shih-yen of the Chinese are fossil shells, species of spirifer and rhynchonella, used medicinally. Fossil wood is found abundantly in Burma, in the Kyen-dween, and Namloroong.

Fossil wood in the sandstones at Trivicary near Pondicherry, at the village of Verdur Valudayur, four miles E. of Trivicary, and other fossils sent to Britain by Mr. Kaye and Mr. Cunliffe, were described by Mr. Edward Forbes. The Trivicary fossil wood is embedded in a coarse silicious conglomerate. The conglomerate in Sind consists chiefly of the rolled fragments of the nummulite and other sub-adjacent rocks. In the cliff at Minora, near Kurachee, adjoining beds of oysters and other sea-shells, *in situ*, along with fossil wood like that of Cairo, and fossils nearly identical

with those of Central India, Burma, and the Siwalik range.

The fossils of Perim Island, in the Gulf of Cambay, are embedded in a conglomerate, consisting mostly of rounded portions of trap in a clayey cement, and along with these are numberless fragments of fossil wood. The wood of Perim is nearly all rounded at the extremities, as if exposed to the action of running water, or of the breakers of the shore. It is, moreover, full of worm-holes, all emanating from its lower, and rising and radiating out towards its upper, surface, as if mineralized and hardened subsequently to its being placed in the position in which it is now found,—the perforations being effected while it was still soft.

Fossil wood is embedded in the sandstone in the desert between Cairo and Suez. The beds of sandstone vary in thickness from a few inches to 100 or 200 feet, are composed of rounded or ovoidal pebbles, nearly all more or less quartzose; the Egyptian jasper being peculiarly abundant, and in many localities embedding silicified trunks and fragments of trees, all sharply angular, and particularly abundant near Jabl-Ahmar near Cairo and Wadi Ansan, about 8 hours' journey to the eastward. The fossils have been left on the surface by the disintegration of the sandstone.—*Oldham in Yule's Embassy; Handbook of Panjab; Dr. J. G. Malcolmson; Smith.*

FOTHERGILLIA INVOLUCRATA. *Falc.*

Kilar, ...	Hind.	Chob-i-pau, . . .	Pers.
Pishor, Paseri, . .	,,	Po, Sha, Spilecha,	,,

In Kashmir, it forms whole tracts of low jungle; also in Ladakh and Kadak, at 4400 to 5000 feet. In general form it resembles a ground ash or gigantic hazel, 10 or 12 feet high, with branches about 2½ inches in diameter, and its fruit in clusters of small nuts. Wood very hard, resembling, but darker than, box. Messrs. Rudall and Rose formed a portion brought to England by Mr. Vigne into a finely-toned flute. It makes excellent tent-pegs.—*Vigne; Falconar; Cleghorn.*

FOUJDAR. Hind., Pers. A person in military employ in the Native States of India, but differing greatly in grades of rank; an officer of the Moghul government having police and criminal jurisdiction in a district. In Rajputana, the Foujdar is a leader of the vassals. The words are Fouj, an army, and Dar, holder.

FOUJDARI ADALAT, a court of military and criminal law. Courts of Sadr and Foujdari Adalat existed at Culcutta, Madras, and Bombay until the establishment of the High Court of Judicature.

FOULKES, The Reverend THOMAS, author of the Elements of the Vedantic Philosophy, Madras 1860; A Synopsis of Hindu Systems and Sects, Madras 1860; The Elements of the Saiva Philosophy, Madras 1863.

FOUNDLING HOSPITALS, and poorhouses for the aged poor, and leper hospitals, are established in China and throughout the British Indian Empire.

FOUR, 4. The figure 4 surmounted the monogram of the E. I. Company, meaning unknown.

FOURCROYA CANTALA. —?

Agave cantala, *Roxb.*		Aloe Americana, *Rumph.*	
Bilati ananas, . .	Beng.	Bramha rakshasi, .	Tam.
American aloe, .	Eng.	Kitta nara, . . .	,,
Great aloe, . . .	,,	Samato, ...	Tel.
Simai katalay, . .	Tam.	Balu rakkisa, . .	,,

This plant flowers when 10 or 15 years old, and when 20 or 30 feet high.

Fourcroya Gigantea. *Vent.* Simai katalay, Tam. The great aloe, one of the Amaryllaceæ, has been introduced into India from S. America. It is remarkable for its leaves, which are often 10 feet long. It yields a fibre 5 or 6 feet long, somewhat finer than agave fibre, but possessing similar properties. It is less abundant than the agave, but is as easily propagated. In preparing its fibre, called aloe fibre, the leaves, cut close to the stem, are placed on a piece of board, and beaten with a short stout stick. After being thus bruised, the pulpy portions are scraped out with a blunt knife, and the fibres are subsequently washed in clean water and dried in the sun. Its long and strong fibre deserves more attention than is given to it. The agave and fourcroya are similarly called aloes, and their fibres, aloe fibre. They are capable of enduring a great variety of climates, and are all rapidly extending over India; but they are not yet sufficiently abundant, the Fourcroya gigantea especially, to yield the fibre in large quantities.—*M. E. J. R.* See Fibres.

FOWLS.

Ki; Chuh-ye, . .	Chin.	Murghi, ...	Hind.
Ouph, ...	Heb.	Koli, ...	Tam.

Though in numerous breeds and sub-breeds, all the domestic fowls seem to have diverged from a single type. The game breed is from the Gallus Bankiva, called also G. ferrugineus. Its feathers are closely depressed to the body; it is indomitably courageous, evinced even in the dispositions of the hens and chickens. It is of various colours.

Malay fowl, with body of great size, disposition savage.
Cochin or Shang-hai breed, of great size, of Chinese origin, and disposition quiet.
Bantam breed, originally from Japan.
Creepers or Jumpers, from Burma, with monstrous short legs.
Frizzled or Kafir fowls of India, with feathers reversed.
Silk fowls, with silky feathering; and
Sooty fowls of India, the hens of which have a white colour, soot-stained, black skin and periosteum.
Gallus Sonneratii does not range into the northern parts of India; part of its hackles consist of highly peculiar horny laminæ, and it is not now believed to be the parent bird of the domestic fowl.
Gallus Stanleyii is peculiar to Ceylon, and greatly resembles the domestic fowl.
Gallus varius, called also G. furcatus, is met with in Java, and the islands of the Archipelago as far east as Flores. It has green plumage, unserrated curb, and single median wattle.
Gallus Temminckii is supposed to be a hybrid.
Gallus Bankiva, inhabits N. India as far west as Sind, ascends the Himalaya to a height of 4000 feet; inhabits Burma, the Malay Peninsula, Indo-Chinese countries, and the E. Archipelago as far as Timor.

The Europe breeds, Dorking, Hamburgh, Andalusian, Spanish, Sultans, Ptarmigan, Ghoaondook, Rumpless, are unknown in S.E. Asia.

A long-tailed variety occurs in Corea; the kind with feathered legs, known in England as Cochin-Chinese, are obtained in Ho-nan. In China, a cock is used in oaths and sacrifices, and is not to be used on ordinary occasions. Black-boned fowls are in China prized to make soups for persons with lung diseases.

Fowls are not mentioned in the Old Testament, and are not figured on Egyptian monuments. They are figured on some of the Babylonish cylinders, B.C. 600 and 700. The Institutes of

Menu permit the wild fowl to be eaten, but forbid the domestic fowl, and Hindus avoid domestic fowls and fowls' eggs. At the present day, most of the pagan tribes on the east coast of Africa, from 4° to 6° south of the equator, hold the fowl in aversion. Cæsar informs us that the Celts of Britain would not eat the hare, goose, or domestic fowl. The Rajput will hunt the first, but neither eats it nor the goose, sacred to the god of battle (Har), and rarely the domestic fowl. The domestic fowl is eaten freely by Mahomedans, and they are largely reared for the table.

Fowls are sacrificed by the Yezdi of Kurdistan. The Assyrians worshipped the cock. The Jews of the East offer a cock for man and woman as an atonement. Socrates, when dying, desired a cock to be sacrificed to the god of health. Fowls fatten best when kept in the dark. In India their eyelids are sewn together.

Fowls' Gizzard, Ki-lui-kin, Chun-pi of the Chinese. The inner lining of the gizzard of fowls is peeled off and dried, and given medicinally in dyspepsia, spermatorrhœa, and urinary disorders. —*Darwin; Tod's Rajasthan; Smith.* See Cock; Gallus.

FOX.

Taaleb, ... ARAB.	Volpe, Volpone, . . IT.
Renard, ... FR.	Kokri, ... MAHR.
Fuchs, ... GER.	Robur, . . . PUSHTU.
Shual, ... HEB.	Zorra, ... SP.
Lomri, Nomri, . HIND.	Tilki, ... TURK.

India has three foxes,—

Vulpes Bengalensis, *Shaw.*

Canis Bengalensis, *Gray.*	Vulpes corsac, *Blyth.*
C. kokree, *Sykes.*	V. Bengalensis, ,,
C. rufescens, *Gray.*	V. Indicus, ,,
Vulpes Indicus, ,,	V. kokree, ,,
Lomri, Loomri, . DUKH.	Bengal, common fox, ENG.
Noomri, ... ,,	

Lives in the entire of India and the adjacent countries, but varies both in size and colour in different localities; is generally of a greyish brown with a fulvous cast, passing in some cases to Isabella; it is always variegated above with an intermixture of whitish hairs. It is a very pretty animal, but much smaller than the European fox, with a short head, very sharp muzzle, oblique eyes, nut-brown irides, very slender legs, and very bushy tail, trailing on the ground. Its principal food is rats, land-crabs, grasshoppers, beetles, and fruit; the mango, the custard apple, are largely eaten. It always burrows in open plains, runs with great speed, doubling like a hare; but instead of stretching out at first, like the hare, and trusting to its turns as a last resource, this fox turns more at first, and if it can fatigue the dogs it then goes straight away.

Vulpes flavescens, *Gray.*

Vulpes montanus, *Hodgs.* | Robur in Kandahar.

This species is numerous in the valleys around Kandahar, hiding in burrows and in holes in the rocks. It is about two feet long from the nose to the insertion of the tail, and the tail is about seventeen inches; height at shoulder, about fifteen inches. Its tail is yellowish; back rather darker, inclining to brown; face and outer side of fore legs and base of the tail fulvous; spot on the side of the face just before the eyes; the chin (breast), the front of the fore legs, a round spot on the upper part of the hind foot, and the tips of the hairs of the tail blackish; end of tail white, and ears externally black. The skins are soft, and are made into the nimchah and postin overcoats.

Vulpes montanus, *Pearson*, the hill fox.

Canis montanus, *Pears.*	Vulpes montanus, *Gray.*
C. Himalaicus, *Ogilby.*	V. Nipalensis, ,,

The hill fox of India dwells in the Himalaya, ranging up to the snow limits; and in winter, when the snow is on the ground, they are very numerous about Simla, coming close to the houses in search of offal. Its fur is exceedingly rich, dense, and fine, the longer sort measuring fully two inches upon the back, and the inner everywhere of considerable length, and of a woolly character. General colour, pale fulvous; head mixed with white; tail bushy and white-tipped.—*Horsfield's Cat.; Col. Sykes; Jerdon.*

FOX ISLANDS, or Aleutian Islands, in the Northern Archipelago, on the west coast of America. This name was given to the whole group (16), on account of the great number of black, grey, and red foxes with which they abound. Lat. 52° 55′ N.

FRAGARIA, the strawberry genus of plants, of the order Rosaceæ. Some wild species occur in India, and others are cultivated. F. Chilensis, *Ehr.*, the Chili strawberry, was brought from S. America. F. collina is also an introduced plant. F. elatior, *Ehr.*, is the hautboy strawberry from America; and F. grandiflora and F. majaufea are also known, as also F. Roxburghii, *W. and A.*, the F. Indica of Roxburgh, which has also been classed with Duchesnea and Potentilla, growing in the Neilgherries, Dehra Doon, and Kamaon. Fragaria vesca, Shie-mei, CHIN., is the wood strawberry.

Fragaria Indica. *Andr.* Wild strawberry.

F. Malayana, *Roxb.*	D. fragiformis, *Don.*
Duchesnea fragarioides, *Sm.*	Potentilla Wallichiana, *Ser.*
Paljor of . . . CHENAB.	Bonun, Musrini of RAVI.
Kanzar of . . JHELUM.	Banaphul of . SUTLEJ.
Ingrach, Yang, Tash, KANG.	Tawai of . . . TR.-IND.

This grows wild in most parts of the Panjab Himalaya, from 4000 to 12,000 feet, in Kamaon, Dehra Doon, Neilgherries, and Penang. The fruit is excellent when gathered dry, but is largely improved by cultivation. See Strawberry.

FRA JOAN, an Augustine monk, who reigned for many years as a petty sovereign on the island of Sundwa, about the middle of the 17th century.

FRANCE, a country of Europe, which, in the 18th century, nobly made exertions for empire in the East. They occupied Madagascar, also the Isles of Bourbon and France; formed a factory at Surat and one at Masulipatam; were repulsed at Galle, but took, and again lost, Trincomalee; settled at Pondicherry, which they surrendered to the Dutch. They took and abandoned Surat, but founded Chandernuggur, conquered Mahe, obtained Karikal, repulsed the British fleet off Negapatam, took Madras. Defeated Mafuz Khan near Madras, at Sadras, and St. Thomé, but were surprised at Cuddalore, twice repulsed and forced to retire. They were besieged in Pondicherry, but repulsed the besiegers. They gained the battle of Amboor, when Anwar-ud-Din fell; surprised the camp of Morari Rao; defeated Muhammad Ali, son of Anwar-ud-Din, stormed Ginji; defeated Nasir Jung; defeated the British at Volconda. They were shut up at Trichinopoly, where they were twice defeated by Clive, and

retreated to Seringham, where they subsequently surrendered to the British. They afterwards defeated the British at Viccravaudi, but sustained a defeat from them at Bahur. They repeatedly defeated the Mahrattas, obtained great power, under M. Bussy, at Hyderabad, and obtained the cession of four provinces on the eastern coast. They defeated the British at Teruvadi, but were defeated at the Golden Rock, at the Sugar-loaf Rock, and took refuge in Seringham; were repulsed at Trichinopoly, but surprised the British and Contapara; made peace with the British, and refused to aid Suraj-ud-Dowla against the British. Subsequently, at Negapatam, they were beaten, but took Cuddalore and Fort St. David, and were repulsed from Tanjore. They were beaten off Tranquebar, at Condore, and off Fort St. David and at Wandiwash, and surrendered Pondicherry. Their efforts ceased from the 16th January 1761. By the treaty of Paris in 1763, Muhammad Ali was declared an independent sovereign. They are a brave and conquering nation, and had able leaders, but the officers under Dupleix and Bussy were inferior. France now holds the island of Bourbon, or Reunion, in the Indian Ocean; also settlements on the coast of Madagascar, at Nossi Bé, the island of St. Marie, and at Bali Bé; the island of Mayotta, one of the Comoro group, was purchased also, in 1841, from a chieftain, and converted into a colony. In Cambodia France has 56,000 square miles of territory, with a population of 750,000 souls, and exercises a protectorate over Annam.

The remaining French possessions in India consist of five towns, Chandernuggur, Karikal, Pondicherry, Yanaon, and Mahe. The total square miles of these is 191½, with a population of 203,887. Pondicherry was restored to France by the peace of 1763; in 1778, again taken by Sir Hector Monro, to be restored by the treaty of peace of 20th January 1783. Captured again in 1793; again restored by the peace of Amiens in 1801. Recaptured in 1803, and finally restored in 1814 and 1815. France sends annually to British India above half a million sterling of merchandise, and takes to the value of eight millions.

During their greatest efforts, Admiral de la Bourdonnais was employed by sea, and Dupleix and Bussy on land. Many eminent men of this nation served in India,—the younger Lally, Law, Dupleix, Bussy, De Suffren, De Boigne, Perron, La Bourdonnais, Dudrenec, Jean Baptiste, Raymond, and Bernadotte, who was subsequently king of Sweden. The noticeable era of the French power in India was but of short duration, but remarkably brilliant while it lasted. It commenced under the government of M. Dupleix in 1749, and was extinguished by the surrender of Pondicherry in 1761.

In 1601 they had sent two ships to India from St. Maloes, under the command of Lieutenant Bardelieu, but both were lost off the Maldives. In 1604 Henry IV. incorporated the first French East India Company, which the minister Colbert in 1664 re-established on an improved footing, granting a monopoly of the trade for fifty years. In 1668 Surat was selected as their first settlement; afterwards Trincomalee was taken from the Dutch, but soon again recaptured. In 1672, St. Thomé, now a suburb of Madras, was taken from the Dutch, but in 1674 it was again restored to them, and the same year they occupied Pondicherry, which they continue to hold. In 1688 Aurangzeb ceded Chandernuggur to the French Company; in 1727 the Company obtained Mahe, which the nation still retains; in 1739 they purchased Karikal from the ruler of Tanjore; and in 1752, Yanam and Masulipatam, which the French had seized in 1750, were ceded to them, the former definitely.

Between 1735 and 1754, Messrs. Dumas and Dupleix contributed greatly to uphold the French power. Dupleix was appointed governor of Chandernuggur in 1730, governor of Pondicherry in 1742 and 1746. In 1798 (19th May) the French nation invaded Egypt; and in 1801 an Indian contingent, under Sir David Baird, sailed for Egypt, where they arrived on the 8th June. It returned from Egypt in July and August 1802. Napoleon Bonaparte returned to France, October 1799. On the 22d October 1798, Colonel Roberts surrounded and disarmed the French troops, 11,000 strong, at Hyderabad.

FRANCKLIN, MAJOR WILLIAM, of the Indian army, author of History of Shah Alam; Memoirs of George Thomas; Observations in a Tour from Bengal to Persia in 1786–87; with Account of the Remains of Persepolis, Lond. 1790; Tracts, Political, Geographical, and Commercial, on the Dominion of Ava and the North-Western parts of Hindustan, 8vo, Lond. 1811.

FRANKINCENSE.

Kundur, ... DUKH.	Kamanan, Manan, MALAY.
Encens, ... FR.	Minan, Kamayan, "
Incenso, . . . IT., SP.	Kandricam, . . . TAM.

Of this there are several kinds in commerce. The best are the Arabian or tear olibanum, the African, and the East Indian or stalactitic. Olibanum and b'dellium, fragrant resins from species of Boswellia, are obtained in India from the Boswellia glabra, and the gum-resin of the Canarium strictum, *Roxb.*, is also fragrant. The oleo-resin of the Abies excelsa, or Norway spruce fir, is known as common frankincense; and in India the oleo-resin of Pinus longifolia is also so called. Some of the frankincense of European markets is doubtless obtained from the Juniperus lycia; and a tree of America is called the frankincense pine.

The substance called Kundricum by the Tamil people is very common in the Indian bazars, and is used as an incense in religious ceremonies equally by the Hindus and Portuguese Christians, being, though not quite of so grateful an odour, cheaper than benzoin. It is supposed by the Mahomedan medical men to be a species of olibanum, and they give the name of Kundur to both; but it is very unlike olibanum in its appearance, being always seen in pretty large agglutinated masses, composed of light-brown and yellowish tears, and having a strange stony kind of hardness when pressed betwixt the teeth; whereas the olibanum is in separate small roundish balls or large grains, which do not give the same sensation on being chewed, nay, even stick to the teeth. The Kundricum is generally brought to Southern India from Madagascar, from the coast of Borneo, and also from Pedir on the island of Sumatra. Common frankincense or thus is a spontaneous exudation from the spruce, the Abies excelsa, *D.C.* —*Ains. Mat. Med.* p. 16; *Birdwood, Veg. Prod.*

FRANKLIN, MAJOR J., an officer of the Indian army, author of Memoir on Bundelkhand; also

wrote on the geology of Bundelkhand, and on the Punna diamond mines.

FRASER, JAMES, author of History of Nadir Shah, and a Short History of the Moghul Emperors, Lond. 1742.

FRASER, JAMES BAILLIE, author of Journey from Constantinople to Tehran, and Travels in Persia; also Travels in the Caspian Provinces of Persia; also Journal of a Tour through part of the Himalaya Mountains and to the Source of the Rivers Jumna and Ganges, 4to, Lond. 1820; also Narrative of a Journey into Khorasan in 1821–22, with an Account of the Countries to the N.E. of Persia, 4to, Lond. 1825; also Travels in Koordistan, Mesopotamia, etc., with Sketches of the Character and Manners of the Koordish and Arab Tribes, 2 vols. 8vo, Lond. 1840.

FRASERPET or Khushhal Nuggur, a town in Coorg, 19 miles N. of Mercara, on the left bank of the Cauvery, in lat. 12° 26′ N., long. 76° 8′ E. It was named Khushhal Nuggur by Hyder, but takes the name of Licutenant-General Fraser, the first Commissioner of Coorg.

FRAXINUS, the ash tree, Aran of the Arabs, and Oren of the Hebrews. Two species of the genus Fraxinus grow in the Western Himalaya,—F. floribunda, or large ash, and F. xanthylloides, or crab ash. They grow in the Mehra forest, near Abbotabad, Hazara; and in the valley of the Sutlej there is abundance of yew and olive, and a considerable quantity of box and ash, the ash and olive near the river, but the box and yew on the higher slopes, 2000 feet or more above the Sutlej. The larger ash and yew are much esteemed for jampan poles, hefts, and tool handles, etc.; and the larger, in colour, grain, and toughness, resembles the English ash, and makes good walking-sticks. Some species of ash are remarkable, like the sugar maples, to which in some respects they are allied, for the sweetness of their sap, which on concreting by exposure to the sun is known as manna. To the two species, F. rotundifolia and F. florifera, and probably also to other species, we owe the manna. Ornus florifera, the flowering ash tree, grows in the mountains of the south of France; and F. rotundifolia (Ornus rotundifolia), the round-leaved manna ash tree, is a native of Calabria and Sicily. The wax insect tree of China, F. Chinensis, grows abundantly on the banks of ponds and canals in the province of Che-kiang. When the insect, Coccus pela, *Westwood*, is fully developed, the trees seem as if covered with flakes of snow. The wax is of great value in Chinese commerce, and a small portion is exported.—*Fortune's Residence*, p. 146; *Cal. Cat. Ex.* 1862; *Cleghorn, P. Rep.; Royle, Him. Bot.* p. 266; *O'Sh.* p. 434.

FRAXINUS FLORIBUNDA. *Wall.*

Sinnu, Shumu,	CHENAB.	Sunnu, ...	RAVI.
Sum, ...	JHELUM.	Ugai, Shing, .	TR.-IND.
Hum, Hamu, .	KANGRA.	Banash, . . .	,,

The large ash is found on the Thandiani and Mochpura ranges of the Himalaya, but not in Kaghan. It is a handsome tree, with a deeply furrowed bark, growing to 15 feet in girth and 120 feet high. The wood is excellent, possessing most of the qualities of European ash. It is valued for jampan poles, ploughs, platters, spinning-wheels, etc., and in Kashmir is reckoned by far the best wood for oars.—*J. L. Stewart, M.D.; Cleghorn, Panjab Report*, pp. 80, 177.

FRAXINUS XANTHOXYLLOIDES. *Wall.*
F. Moorcroftiana, *Wall.*

Butru, Sandal, .	CHENAB.	Chijla, Chuj, .	KANGRA.
Shangal, . . .	,,	Siju, ...	,,
Crab ash, . . .	ENG.	Chum, Thum, .	SUTLEJ.
Nuch, Hanuz, .	JHELUM.	Shang, . . .	TR.-IND.
Shilli, ...	,,		

The crab ash is a large shrub or small tree. It grows in the N.W. Himalaya, and is found in the Sutlej valley between Rampur and Sungnam at an elevation of 7000 feet, and in Tibet up to 12,000 feet. It rarely reaches a girth of 5 feet and 25 feet high. The wood is small, but hard, heavy, and strong, mostly used for walking-sticks, hefts, handles, etc., and for fuel. Cleghorn states that it is at times used for jampan poles.—*J. L. Stewart, M.D.; Cleghorn, Panj. Report*, p. 64.

FREDERICK. Cæsar Frederick, a Venetian merchant, in 1563 travelled by way of the Persian Gulf to India, and on to Pegu in 1568. The account he gives of his travels was translated into English in 1588, by Thomas Hichoch. He describes Cambay, Ahmedabad, and Goa, and gives a detailed account of the commerce of Pegu. It had previously been visited by Antonio Correa, who, shortly after the occupation of Malacca by the Portuguese, was despatched thither with the view of establishing trade with Burma. It was subsequently (1583) visited by Gasparo Balbi; and his Viaggio dell' Indie Orientale and Cæsar Frederick's Narratives are the best notices we possess of this country until the publication of the modern works of Symes and Phayre.

FREGILUS GRACULUS, the chough, is found on high mountains and sea-cliffs of Europe, Asia, and Africa, is common in high Central Asia, the Himalaya, Afghanistan, etc.; as is also another chough, Pyrrhocorax alpinus, of the Swiss Alps and Pyrenees.

FRENCH BEANS, haricots.

Faginoli, ... IT. | Judia, ... SP.

Contain much nutritive matter, and are most desirable for the food of troops.

FRERE, SIR HENRY BARTLE, K.C.B., an eminent Bombay civil servant, Commissioner of Sind, Member of the India Council, afterwards Governor of the Bombay Presidency. He went as envoy to the sultans of Zanzibar and Muscat, with the humane object of endeavouring to put a stop to the slave-trade. He reported that from the remote island of Johanna to the Persian Gulf there are some rulers who are ashamed of and abjure slave traffic; that the prince who reigns at Muscat had not shrunk from declaring the freedom of every slave who shall land in his territory; and that Colonel Pelly had induced the Arab chiefs of what was once the pirate coast, to renew, confirm, and extend their engagements.

FRESCO PAINTINGS cover the walls of the caves of Ajunta; the walls of the mosque of Wazir Khan at Lahore are also covered with them.

FREYCINETIA BAUERIANA, the Norfolk Island grass tree, belongs to the tribe of Pandaneæ or screw pines. Its stem is marked by rings like the cabbage tree, where the old leaves have fallen off; and it lies on the ground, or climbs like ivy round the trees. The branches are crowned with crests of broad sedge-like leaves, from the centre of which the flowers arise, the petals of which are a bright scarlet, and the sepals green; and, when they fall off, clusters

appear of three or four oblong pulpy fruit, four inches in length, and as much in circumference. —*Keppel's Ind. Arch.* ii. p. 284.

FRIGATE BIRD, the Attagen aquilus, *L.*, and Tachypetes aquila, *Illiger*, is also called the sea hawk, also man-of-war bird and the boatswain. It has short feet, and cannot swim or dive. It is intermediate between the predaceous sea and land birds. It attacks the smallest birds, and makes other fishing birds abandon their prey. It takes extended flights, and is of great endurance, rising to vast heights in the air. It ranges through all tropical seas, and has been seen 400 leagues from land, but sailors say it returns to land every night. Its expanded pinions measure 14 feet from end to end. A. minor occurs in Australian seas.—*Ben.*

FRINGILLIDÆ, a family of small birds, which ornithologists arrange into six sub-families, viz. the Ploceinæ or weaver birds, the Estreldinæ are the munia or amadavads and wax bills, the Passerinæ or sparrows, the Emberizinæ or buntings, the Fringillinæ or finches, and the Alaudinæ or larks. The weaver birds build nests of strips of leaves or grass interwoven together. The amadavads are social little birds. The sparrows also are social, many of them preferring to dwell in towns. The ortolan bunting, E. hortulana, *L.*, occurs in the west of India; the Fringillinæ, comprising the grosbeaks, crossbills, rose-finches, and bullfinches, and the larks, are often kept as cage-birds. Fringilla montifringilla, the mountain finch of Europe, N. Asia, Japan, Asia Minor, Afghanistan, Kashmir, W. Himalaya, is a winter visitant in Britain, and the European Montifringilla nivalis has been obtained at Kandahar.

FROG-FISH, Cheironectes, *sp.*, the frog-fish of the British in India, belongs to the family of Lophiadæ or anglers, Lophius histrio and others, and species are met with in many seas. In this group the bones of the carpus form arms that support the pectoral fins, and enable these fishes to walk along the moist ground. C. immaculatus, *Ruppell*, has feet or claws rather than fins. Hartwig mentions a frog-fish of the Asiatic islands and the southern hemisphere, as remarkable for its hideous appearance and its capability of surviving for several days on land. Its pectoral fins are so placed that it can crawl about on land.—*Tennant's Ceylon*, p. 330.

FROGMOUTH, species of birds of the genera Batrachostomus and Otothrix.

FROGS.

Grenouille, ... Fr.	Ranocchia, ... It.
Frosch, ... Ger.	Rana, ... Sp.
Mendak, ... Hind.	

Frogs are very common in all the south and east of Asia. They belong to the reptile sub-class Batrachia, and order Batrachia salienta. The Malabar bull-frog, Hylorana Malabarica, occurs in several parts of the Peninsula of India. The Rana cutipora occurs in Ceylon; it was named by Mr. Blyth Rana robusta. The little tree-frogs, Polypedates maculatus, *Gray*, shelter themselves beneath leaves from the heat of the sun; and several species of Polypedates occur in this region. The toes of the tree-frogs terminate in discs. Many of the small tree-frogs are mimickers. When seen in their natural attitudes, they cannot be distinguished from beetles or other insects sitting upon leaves. Several species of toads occur in Ceylon, but the more common are Buffo melanostictus, Kelaartii, and asper. As in Europe, so in India, these harmless creatures have ever been counted poisonous. In Ceylon this error is as old as the 3d century B.C., when, as the Mahawansa tells us, ch. xx. p. 122, the wife of king Asoko attempted to destroy the great Bo Tree (at Magadha) with the poisoned fang of a toad. Frogs are eaten in Europe, in India by the humblest of the races, by many of the Burmese, and in China by all classes. In Southern India, on Fridays, in the convents, Christian ladies from Europe use them. They are caught in China by tying a worm or a young frog just emerged from tadpole life by the waist to a fish-line, and lobbing him up and down in the grass and grain rice-fields where the old croakers are wont to harbour. As soon as one sees the young frog, he makes a plunge at him, and swallows him whole, whereupon he is immediately conveyed to the frog-fisher's basket, losing his life, liberty, and lunch together, for the bait is rescued from his maw, and used again as long as life lasts. Frogs, says Fortune, are in great demand in all the Chinese towns, both in the north and south, wherever he had been, and they were very abundant in Nan-tsin. They abound in shallow lakes and rice-fields, and many of them are very beautifully coloured, and look as if they had been painted by the hand of a first-rate artist. The vendors of these animals skin them alive in the streets in the most unmerciful and apparently cruel way. They are brought to market in tubs and baskets, and the vendor employs himself in skinning them as he sits making sales. He takes up the frog in his left hand, and with a knife which he holds in his right chops off the fore part of its head. The skin is then drawn back over the body and down to the feet, which are chopped off and thrown away. The poor frog, still alive, but headless, skinless, and without feet, is then thrown into another tub, and the operation is repeated on the rest in the same way. Every now and then the artist lays down his knife, and takes up his scales to weigh these animals for his customers and make his sales. Everything in that civilised country, whether it be gold or silver, geese or frogs, is sold by weight. Boiled frogs in a Burmese bazar are exposed for sale among other articles of food. The Pyxicephalus adspersus of Dr. Smith, the Matla-metlo of the Bechuana of S. Africa, when cooked, looks like a chicken. The length of the head and body is 5½ inches, and the hind legs are 6 inches long. During the dry months they conceal themselves in holes which they make at the foot of bushes.—*Williams' Middle Kingdom*, ii. p. 48; *A Res. among the Chin.* pp. 45, 343; *Tennant's Ceylon; Livingstone.* See Reptiles.

FRUIT.

Samar, Thamar, . Arab.	Bua, ... Malay.
Athi, ... Burm.	Bar, Mewa, . . Pers.
Ooft, ... Dut.	Owoschtsch, . . . Rus.
Obst, Fruchte, . . Ger.	Fruta, ... Sp.
Phal, Mewa, . . Hind.	Kai, Pallam, . . . Tam.
Frutta, Frutte, . . It.	Pandu, also Kaia, . Tel.
Fructum, ... Lat.	Yemish, Meyve, . Turk.
Fal, ... Mahr.	

The better known of the fruits of the S.E. of Asia are as under:—

Custard-apple, Anona squamosa.	Jack, Artocarpus integrifolia.
Soursop, A. muricata.	Breadfruit, A. incisus.
Bullock heart, A. reticulata.	A. communis.

Carambola, Averrhoa carambola.
Bilimbi, A. bilimbi.
Bengal currants, Carissa carandas.
Cherry, Cerasus.
Chestnut, Castanea Martabanica.
Chocolate nut tree, Theobroma cacao.
Double-leaved citron, Citrus torosa.
Orange, C. aurantium.
Sweet limes, C. limetta.
Shaddock, C. decumana.
Citron, C. medica.
Small lime, C. bergamia, C. acida.
Large lime, C. bergamia.
Lemon, C. limonum.
Cocoanut, Cocos nucifera.
Dorian, Durio zibethinus.
Figtrees, Ficus carica, lanceolata, glomerata, and macrophylla.
Hog plum, Spondias mangifera.
Otaheite gooseberry, Cicca disticha.
Brazil gooseberry, Physalis.
Granadilla, Passiflora quadrangularis.
India grape, Vitis Indica.
Grape vine, V. vinifera.
Guava, Psidium pyriferum (white).
Guava, P. pomiferum (red).
Leechee, Nephelium lichi.
Loquat, Eriobotrya japonica.
Mango, Mangifera Indica.
Mango, M. sylvatica.
Horse mango, M. fœtida.
Opposite leaved mango, Cambessedea oppositifolia (mangifera).
Mangosteen, Garcinia mangostana.
Water melon, Citrullus cucurbita.
Musk melon, Cucumis melo.
Mulberry, Morus Indica.
Oleaster plum, Eleagnus conferta.
Pawpaw, Carica papaya.
Pear, Pyrus.
Pierardia fruit, Pierardia sapota.
Pine-apple, Ananas sativus, Bromelia ananas.
Plantain, Musa paradisiaca.
Pomegranate, Punica granatum.
Rambutan, Nephelium lappaceum.
Raspberry, Rubus, *sp.*
Roselle, Hibiscus sabdariffa.
Rose apple, Eugenia jambos, Jambosa vulgaris.
Jambo fruit, E. jambolana.
Malay apple, E. jambosa, E. Malaccensis.
Doricum Indicum.
Strawberry, Fragaria, *sp.*
Sapodilla plum, Achras sapota.
Fœtid sterculia, Sterculia fœtida.
Budh's cocoanut, S. alata.
Tamarindus Indicus.
Triphasia trifoliata.
Uvaria grandiflora.
Walnut, Juglans regia.
Walnut Pegu, J. tricocca, ta soung-let-wah.
Whortle berry, Thibaûdia loranthifolia.
Willoughbeia Martabanica.
Wood-apple, Feronia elephantum.

In few natural products is India more prolific than in its fruits. The pine-apple, mango, mangosteen, jambo, tamarind, orange, strawberries, dorian, guava, jack, grapes, figs, peaches, pomegranate, apricot, apple, pear, and loquat are amongst the best known, besides an infinite variety of smaller fruits, partaken of by the natives, either dried or in their curries. To the north, and in the hill districts, peaches, grapes, figs, etc., are both abundant and of good quality. In the south and central parts of Hindustan the fruits and vegetables in general use amongst the people are the melon, gourd, cucumber, water-melon, plantain, guava, jujube, custard-apple, and fig. In some of the hill districts the wild raspberry and a species of gooseberry are found in great abundance and of good quality. On the N.W. of India, in parts of the Panjab, Himalaya, in Kashmir and in Afghanistan, the fruits preferred by Europeans are more plentiful. In Kashmir the fruits which attain maturity are the apple, pear, quince, peach, apricot, plum, almond, pomegranate, mulberry, walnut, hazel-nut, pistachio, and melon. The gilas cherry is indigenous, and is cultivated in orchards. The bullace, Prunus insitita, is found nowhere else in a wild state. The vine is extensively cultivated.

In Kashmir there are four varieties of walnut; one of these grows wild in the forest, and the others are cultivated. The former is very tiny, and the scanty kernel is encased in a thick shell. One of the horticultural species is very much superior to the others; it is the Kaghazi (from Kaghaz, paper), because the shell is as thin as paper, and can easily be broken by the hand. The superiority of this species is attributed to its having been originally engrafted; but though now raised from seed, it does not become deteriorated. Some of the Panjab fruits are the produce of the waste or jungle lands; others are regularly cultivated; but among the most remarkable are the products of the thal or sterile sandy portions of the Muzaffargarh district. The berries of the salvadora, the seed-pods of the jhand (Prosopis spicigera), which are ground up and made into bread when dry, the acid berries of the Withania coagulans, used to curdle milk with, the shoots of that singular plant which is occasionally found in jhand and pilu thickets, the Boucerosia edulis, and also dried mushrooms, are among edible products of the province.

In Kanawar, apples are abundant and nice-looking, though not with much flavour. Peshawar exports dried red raisins, which sell at 18 lbs. for a shilling, and dried raisins of a pale green colour, which sell at 4 lbs. for a shilling; and bloom raisins are also obtainable. Dried apricots are very abundant; also figs dried, flattened, and strung together; also the dried plum (alucha) of Peshawar. The small seedless raisin, the kismis, is in every bazar. In the upper hills of the Panjab, the apricot (jaldaru or zardaru) is common, its kernel yielding oil. Apples and pears are also grown. There are two species of cherry, the jamuna, or Cerasus cornuta, and the Cerasus padam; the former has black sweetish berries, which are eaten. The wild pear, called mehal or kainth (Pyrus variolosa), is common also in the hills. It somewhat resembles the medlar, and the fruit is sweet when it is rotten. In Kangra and Kulu there is a crab or wild apple, called ban mehal (Pyrus baccata), also a quince (Cydonia vulgaris). The fruit of the trimal, or Ficus macrophylla, is sold in the bazar at Simla. There are on the Upper Sutlej some species of Ribes (R. nubicola and R. glaciala), which are like currants, but have little flavour; also a species of gooseberry. There is a wild strawberry (Fragaria Indica), and a blackberry, called unsri (Rubus flavus), the fruit of which is preserved. In Kulu and Kangra the loquat (Eriobotrya Japonica), and the pomegranate, darim (Punica granatum), both occur. The mitha tendu, or fruit of the Diospyros tomentosa, must not be omitted. In the Sutlej valley, Myrica sapida yields a fruit useful for making sherbets. Among nuts we find the findak, or nuts of Corylus lacera, sold at Simla; and the seeds of the edible pine (P. Gerardiana) are kept for food in Kanawar, where they sell at 2 annas a seer = 1½d. the lb. Above Chini this tree is the principal one in the forest. In the lower hills the fruit of the amla (Phyllanthus emblica) should perhaps be included; the well-known plantain and mango do not occur. The latter is last seen, says Dr. Cleghorn, near Rampur on the Sutlej, and the former below Kotgarh. Eleagnus conferta gehai and Carissa edulis yield fruits that can be preserved, the latter making the well-known Karunda jelly.

The fruits of Sind are from Cordia Rothii, *R. and S.*; Grewia affinis, salicifolia, rigida, *J. E. Stocks*; Tamarindus Indica, *Linn.*; Capparis aphylla, *Roxb.*; C. Decaisnei, *Stocks*; Momordica

balsaminæ, *Linn.*; Salvadora Persica, *Linn.*; S. Indica, *Royle*; Solanum incertum, *Dun.*; Phyllanthus multifloris, *Linn.*, and Coccinea Indica, *W. and A.*

At Yercaud, on the Shevaroy Hills, at Bangalore in Mysore, and on the Neilgherry Hills, the fruits of temperate climates grow readily at heights of from 3000 to 6000 feet above the sea. Varieties of the pear, the bullock's-heart, apple, apricot, citron, carambola, cherry, custard-apple, fig, grape, guava, loquat, lime-tree, leechee, mangosteen, nectarine, varieties of the orange, with the bitter orange, the peach, pear, plum, Orleans plum, pomegranate, quince, rose-apple, sapodilla, soursop, and shaddock or pumplemose.

In Burma the fruits are very numerous, but nearly all of them very indifferent, though to a Burmese, who, while a child, eats a raw sweet potato with as much zest as a European would an apple, they are no doubt considered unsurpassable. The ancient Celts ate acorns, the modern Californians still use acorn bread, and the Burmese and Karens eat fruits which are but little superior to an acorn; in general, their fruits are much inferior to those of temperate climates.

The Malay names of the principal fruits of Penang, Singapore, and Siam are the amrah, Assam-glugor, Assam-kulubi, blimbing, blimbing buloh, blimbing saga, blinjöw, buah-bell, buah-blingai, buah-bunga, buah-dulce mah, duku, kambule, kandangra, katapang, konajang, langsat, lemon-purut, namnam, palasan, rambai, rumania, sillooh.

The only trees to the cultivation of which the Chinese pay any attention, are the fruit-bearing kinds; and in some places, in China, there are very fair orchards, containing the mango, leechee, longan, wangpee, orange, citron, and pumelow. The yang-mai is a scarlet fruit, not unlike an arbutus or strawberry, but having a stone like a plum in the centre. The kum-quat is a small species of citrus, about the size of an oval gooseberry, with a sweet rind and sharp acid pulp; a small quantity is annually sent to England as presents. Preserved in sugar according to the Chinese method, it is excellent. Groves of the kum-quat are common on all the hill-sides of Chusan. The bush grows from three to six feet high, and when covered with its orange-coloured fruit, is a very pretty object. The shaddock, plantain, and persimmon are common, and several varieties are enumerated of each; the plantain is eaten raw and cooked, and forms no inconsiderable item in the subsistence of the poor. The pomegranate, carambola or tree gooseberry, mango, custard-apple, pine-apple, rose-apple, bread-fruit, fig, guava, and olive, some of them as good and others inferior to what are found in other countries, increase the list. The whampe, leechee, lungan or dragon's eyes, and loquat (eriobotrya) are four indigenous fruits at Canton. The first resembles a grape in size, and a gooseberry in taste; the leechee looks like a strawberry in size and shape; the tough, rough red skin encloses a sweet watery pulp of a whitish colour, surrounding a hard seed. Grapes are plentiful, and tolerably good, but the Chinese do not make wine.

Fruits and Vegetables, Dried, Salted, exported from India.

Year.	Cwt.	Rs.	Year.	Cwt.	Rs.
1875-76,	43,257	1,67,375	1878-79,	60,907	2,52,050
1876-77,	78,774	1,89,805	1879-80,	94,091	2,92,332
1877-78,	59,541	1,85,140			

—*Williams' Middle Kingdom*, ii. p. 45; *Fortune's Wanderings; Cleghorn's P. Rep.; Mason's Tenasserim; M'Clelland's Report; Powell; Macnair; Mrs. Harvey.*

FRYER, JOHN, surgeon to the English E. I. Company. In a letter he asked to be made surgeon to the Surat factory. He travelled in Persia and India from 1672 to 1681; and his New Account of the East Indies and Persia, published in 1698, gives pictures of factory life in his time, and of the condition of the people of India. It is entitled Account of East India and Persia, being Nine Years' Travels, from 1672 to 1681, containing Observations on their Government, Religion, Laws, Customs, etc., fol., Lond. 1698.

FTITA. ARAB. An unleavened paste of flour and water, baked in ashes of camels' dung, and mixed up with a little butter.—*Robinson's Travels.*

FU. Every Chinese province is divided into a certain number of districts, called Fu, Ting, Chow, or Heen. Fu is a large portion or department of a province under the general control of a civil officer, immediately subordinate to the head of the provincial government. Ting is a smaller division than, and sometimes a portion of, a Fu; when separate, it is governed as a Fu, and called a Chuh-le.

FUCACEÆ, the sea-weed tribe of plants, the Algaceæ of Lindley and the Algæ of Jussieu. They are leafless, flowerless water plants. A species is mentioned by Dr. Bennett (p. 12) as growing on coral banks in isolated patches, which stings like a nettle. It is about a foot in length. It has a small corrugated granular bag filled with a transparent fluid.

Fucus natans is the Gulf weed which travellers to and from India meet with in the Atlantic. Agar-agar is the Malay name for the Fucus tenax of many of the Malayan islands, and forms a considerable article of export to China by junks. It is esculent when boiled to a jelly, and is also used by the Chinese as a vegetable glue. It abounds on the coral shoals in the vicinity of Singapore, but the finest known in the Archipelago is found on the coast of Billiton. It is known to the Chinese by the name of Hy-chy, and is converted by them into various purposes, such as glue, paint, etc. The chief consumption of it is in the dressing and glazing of their cotton manufactures, and the preparation of sacrifice paper and paintings for their temples. A small portion of the finest part is sometimes made into a firm jelly, which on being cut up and preserved in syrup makes a delicious sweetmeat.

Iodine is obtained from various species, Fucus vesiculosus, *L.*, F. nodosus, *L.*, etc.

Fucus amylaceus, *O'Sh.*

F. esculentus of authors. | F. lichenoides, *Turner.*
Ceylon moss, . . ENG. | Kaddil-pash, . . . TAM.

Grows in great abundance at Jafnapatam, and when boiled down makes an excellent jelly for invalids, and forms an article of trade thence.

Fucus spinosus, *Linn.*, F. tenax, *Turner.* Syns. of Eucheuma spinosa, the Gracillaria tenax of authors.—*Bennett*, p. 12; *Crawfurd, Dict.* p. 6. See Agar-Agar; Ceylon Moss; Edible Sea-weed; Eucheuma spinosa; Gracillaria tenax; Sphærococcus.

FUCHSIA, a genus of beautiful plants, which can be cultivated in India during the rains and cold season. They grow freely from slips, which

may be sent to a great distance if packed either in a tin case or bamboo, surrounded with damp moss. The soil in which they strike best is a light sandy loam. The slips, until they have thrown out strong shoots and leaves, must never be exposed to the sun, and even then only early in the morning.

FU-CHU, the capital of Foh-kien province, one of the most wealthy and populous cities in China.—*Yule, Cathay*, i. p. 109.

FU DO, a Buddhist deity of Japan. The figure is usually seated, always surrounded with flames, holding a naked sword in the right hand, and in the left a coil of rope, with which to punish the wicked.—*Sir J. E. Reed*, p. 84.

FUDSI YAMA or Fusi-Yama, a high volcanic mountain of Japan, at present inactive, but which tradition reports to have risen in one night, and as it rose there occurred a depression in the earth near Miako, which now forms the lake of Mit-su-no-umi. In A.D. 864 the mountain burst asunder from its base upwards, and at its last eruption in 1707 it covered Yedo with ashes. It is a sacred mountain. It is crested with snow, and presents the appearance of a truncated cone, and the gathering of a white cloud around its summit is a sign of bad weather. It is occasionally ascended by Japanese pilgrims for the worship of the god of the winds. Its peak, in lat. 25° 31′ N., and long. 138° 42′ E., is more than 14,000 feet above the sea. See Japan; Yama.

FUH, the Chinese abbreviation of Fuh-too or Buddha. Fuh-kwoh, the land of Buddha, the Chinese name for Tibet.

FULADAT, a town near Bamian; yields gold and lapis-lazuli.

FULIGULINÆ, a sub-family of birds of the family Anatidæ. It contains one species of the genus Branta, four species of Fuligula, and two of Aythya. Fuligula ferina, the pochard, in the circuit of northern regions, Barbary, is common in India. F. nyroca, ferruginous duck, Europe, Asia, N. Africa, is common in India. F. marila, scaup duck, circuit of northern regions, Panjab, Sind, Nepal. F. cristata, tufted duck, Europe, Asia, Barbary, is common in India. F. rufina of Pallas is the crested pochard.

FULLERS' EARTH.

Wu-sih-shih-chi, .	Chin.	Terra da purgatori, .	It.
Volaarde, . . .	Dut.	Terra fullonum, .	Lat.
Terre-a-foulon, . .	Fr.	Schiffernaia, . .	Rus.
Walkererde, . .	Ger.	Tierra de batan, . .	Sp.

A soft, dull, greasy kind of clay, usually of a greenish-brown colour. It is used in the fulling of cloth from its property of absorbing oil and greasy matter. It is found in various parts of the south of England. Two kinds are distinguished, —yellow earth, the best, employed for the finer cloths of Wiltshire and Gloucestershire; and blue earth, principally used in fulling coarser cloths in Yorkshire. Kan-tu of the Chinese, meaning fullers' soap, is a kind of fullers' earth obtained in Peh-chi-li, Ho-nan, and Shen-si in China. It is used to remove grease from cloths.—*M'Culloch; Smith.*

FULLJAMES, Capt., an officer of the Bombay army who wrote an account of the island of Perim in the Bom. As. Trans. i. p. 18; Visit to the Rajpeepla Hills, and Account of the Cornelian Mines, in Bom. Geo. Trans. i. p. 8; A Report on the Floods of the Taptee at Surat in 1837, ibid. vii. p. 352; An Account of Borings and Strata passing through the Gogo, in the Bl. As. Trans. 1837; Bom. As. Trans. 1841, i. p. 25; An Account of a Singular Hollow near Ahmedabad, called the Boke, supposed Volcanic, in the Bom. Geo. Trans. vii. p. 164; and On the Present and Former State of the Runn of Cutch, ibid. viii.—*Dr. Buist's Catalogue.*

FUMARIEÆ, the fumitory tribe of plants, of which there are about 70 species, a moiety known in India, Japan, and Persia. The Indian species, besides two that are common to other countries, consist of about 16 of Corydalis, 1 of Dactylocapnos, and 1 of Macrocapnos. The plants of this order have watery juice, are common in the Himalaya from Nepal to Kashmir, and contain a bitter principle.—*Voigt.*

FUMARIA OFFICINALIS. *L.* Fumitory.

Baqlat-ul-malik, .	Arab.	Pit-papra, Papra,	Hind.
Tsze-hwa-ti-ting, .	Chin.	Shaturuj, ...	Pers.
Fumeterre, ...	Fr.	Shatra, ...	„

This is used by Indian physicians, who consider it diuretic. Among European practitioners it was long regarded as a valuable tonic and alterative. From the Latin Fumus, smoke.—*O'Sh.*

FUMARIA PARVIFLORA, *W. et A.*, has the same synonyms. It greatly resembles F. officinalis, but is smaller. Flowers of a pale-red colour. It is found in Kent, and is also very common in the East Indies. F. parviflora is considered to be identical with the καπνός of the Greeks. It is much used in the Upper Provinces of India, mixed with black pepper, in the treatment of intermittent fevers. Is extensively employed as an anthelmintic and in mania, to purify the blood in skin diseases; also as a diuretic, diaphoretic, and aperient. —*Powell*, i. p. 327; *O'Sh.*

FUND. This term is applied in India to insurance and mutual benefit societies, established early in the 19th century by the servants of the East India Company, to provide retiring annuities for themselves and pensions for their wives and children. It was a grand scheme, of incalculable benefit to the officers and to the Government. The several service funds were abolished on the government of the country being taken over by the British Government, and others introduced.

FUNG FO SHIN, the wind and fire gods of the Chinese.

FUNGUS.

Ti-rh; Muh-rh, .	Chin.	Shirian of . .	Jhelum.
Champignon, Fongus,	Fr.	Kulat, Chandawan,	Malay
Schwamm, . . .	Ger.	Bat-bakri of . . .	Ravl
Kana kuchu, . .	Hind.	Hongo, ...	Sp.
Fungo, ...	It.		

Under this name botanists comprehend not only the various races of mushrooms, toadstools, and similar productions, but a large number of microscopic plants forming the appearances called mouldiness, mildew, smut, rush-brand, dry-rot, etc. They are cellular flowerless plants, and are arranged into mushrooms, puff-balls, smuts, mildews, truffles, morelles, moulds.

They are numerous in India, growing on or in damp vegetable mould. The common field mushrooms are eaten. But several poisonous fungi so closely resemble the common mushroom, that the utmost caution is necessary in their use. No test whatever, whether botanical or chemical, can be relied on to distinguish the dangerous from the wholesome kinds. Special cultivation is the only sure mode of procuring the mushroom of invari-

ably good quality. One fungus resembling a mushroom grows at the foot of the bamboo, and is regarded by the Burmese as a valuable specific in worms. Few fungi were found by Dr. Thomson in the N.W. Himalaya, and for the most part differed but little from the produce of a European wood. Some, however, grow to a very large size, as for instance Polyporus fomentarius, on poplars near Iskardo, exceeding in dimensions anything which this species exhibits in Europe. A very fine Æcidium (Æ. Thomsoni) also infests the fir tree Abies Smithiana, hexenbesen of the German foresta, but is a finer species, and quite distinct. Polyporus oblectans, Geaster limbatus, Geaster mammosus, Erysiphe taurica, a boletus infested with Sepedonium mycophilum, Scleroderma verrucosum, an Æcidium, and a Uromyces, both on Mulgedium tataricum, about half-a-dozen agarics, one at an altitude of 16,000 feet above the Nubra river, a Lycoperdon, and Morchella semilibera, which is eaten in Kashmir, and exported when dry to the plains of India, make up the list of fungi.

The Sikkim region of the N.W. Himalaya is perhaps the most productive in fleshy fungi of any in the world, both as regards numbers and species; and Eastern Nepal and Khassya yield also an abundant harvest. The forms are for the most part European, though the species are scarcely ever quite identical. The dimensions of many are truly gigantic, and many species afford abundant food to the natives. Mixed with European forms, a few more decidedly tropical occur; and amongst those of East Nepal is a Lentinus, which has the curious property of staining everything which touches it of a deep rhubarb yellow, and is not exceeded in magnificence by any tropical species. The Polypori are often identical with those of Java, Ceylon, and the Philippine Isles; and the curious Trichocoma paradoxum, which was first found by Dr. Junghuhn in Java, and later on by Dr. Harvey in Ceylon, occurs abundantly on the decayed trunks of laurels, as it does in South Carolina. The curious genus Mitremyces also is scattered here and there, though not under the American form, but that which occurs in Java. Though Hymenomycetes are so abundant, the Discomycetes and Ascomycetes are comparatively rare, and very few species indeed of Sphæria were gathered. One curious matter is, that amongst the very extensive collections which have been made, there is scarcely a single new genus. The species, moreover, in Sikkim are quite different, except in the case of some more or less cosmopolite species, from those of Eastern Nepal and Khassya; scarcely a single Lactarius or Cortinarius, for instance, occurs in Sikkim, though there are several in Khassya. The genus Boletus through the whole district assumes the most magnificent forms, which are generally very different from anything in Europe.

A fungus has done enormous damage in the Ceylon coffee plantations. When a coffee tree is attacked by the bug, it is deprived of its sap and its nourishment, whilst the fungus, which never fails to attend on the bug, prevents restoration by closing the stomates through which the tree breathes and respires. About the year 1880, a new fungus in Ceylon was causing the leaves of the coffee trees attacked with it to fall off. The Rev. M. J. Berkeley says of it, that amongst more than a thousand species of fungi previously received from Ceylon this had not occurred; and it is not only quite new, but with difficulty referable to any recognised section of fungi. Indeed, it seems just intermediate between true mould and Uredo, allied on the one hand to Trichobasis, and on the other to Rhinotrichum. Though the fungus is developed from the parenchym of the leaf, there is not any covering to the little heaps, such as is so obvious in Uredo and its immediate allies, while the mode of attachment reminds one of Rhinotrichum. He was obliged, therefore, to propose a new genus for its reception. As the fungus is confined to the under surface of the leaves, and the mycelium is not superficial, it may be difficult to apply a remedy; but he would be inclined to try sulphur by means of one of the instruments which are used in the hop-grounds in Kent, or syringing with one of the sulphurous solutions which have been recommended for the extirpation of the hop mildew.

The Ti-rh or Mub-rh of China are fungi growing on trees, and preferred by the Chinese to the more delicate mushrooms.

Colonists in New Zealand have exported to China a fungus growing abundantly on decaying timber in all the forest districts of the colony, known as Hirneola polytricha, much resembling the variety commonly known as Jew's-ear; a considerable trade in this commodity sprang up since 1872. One year the total quantity exported amounted to about 250 tons, which, at £44 a ton, represented a value of £11,000. The selling price retail in China is about 1s. per lb. It is used by the Chinese in the shape of a decoction, and is supposed to purify the blood. It is also largely consumed in soups, and as an ingredient in various farinaceous dishes.

A dried fungus, used as food in Singapore, does not appear to differ from the Hirneola auricula Judæ of Britain, which has a wide range.

The Shirian of Jhelum, and Bat bakri of Ravi, is a thin, flat, ragged-looking fungus, yellow above and with white gills below, which is got on dead trees in various parts of the Panjab Himalaya at 8000 to 8500 feet. The natives slice and cook them, either fresh or dry, and eat them as a relish with bread. Dr. Stewart tried them in stews, etc., but found them leathery and flavourless. The Buin phal of the Panjab is an underground mushroom, mentioned by Edgeworth as found in cultivated ground near Multan, and eaten by natives, but which he did not find at all palatable.—*O'Sh.; Hooker's Him. Jour.* ii. p. 381; *Nietner; Smith's China; Powell; Dr. J. L. Stew.; Rev. M. J. Berkeley.*

FURNEAX ISLANDS, at the S.E. part of Bass Strait, form a great chain. They comprise Barren Island, Clerk Island, Great or Flinder's Island, and other islands.

FURNITURE, and Furniture Woods.

Meubles, ...	Fr.	Mobili, ...	It.
Ameublement, ...	,,	Ajuar, ...	Sp.
Hausgerath, . .	Ger.	Dûshimi, Eshsy, .	Turk.

The native carpenters of India have long been celebrated for the great patience and fidelity with which they imitate the most elaborate details either of art or manufacture, but they are generally deficient in design, and much may still be done to infuse artistic taste and boldness of execution, when better principles of art are brought to bear upon this branch of industry. The woods used for

furniture in Madras are,—for common furniture, Chittagong wood, teak wood, toon, jack; and for carved and ornamental furniture, ebony, black-wood, or East India rosewood, satin-wood, kyaboca wood.

The Chittagong wood (Chickrassia tabularis) is more used at Madras in the making of furniture than any other wood. It is light, cheap, and durable.

The teak (Tectona grandis) is probably the most durable of all timbers. It is very hard, and very heavy. It is extensively used for bullock trunks and for house and camp furniture, for which it is well adapted, as it does not split.

The toon (Cedrela toona) resembles its congeners, Chittagong wood and mahogany, and is very much used for furniture all over the Peninsula.

The jack-wood (Artocarpus integrifolia) is an excellent timber, at first yellow, but afterwards brown. When made into tables and well kept, it attains a polish little inferior to mahogany. In England it is used, as well as satin-wood, for making backs of hair-brushes, etc.

Black ebony (Diospyros melanoxylon). This well-known and much-admired wood, Lignum nigrum, non variegatum? is very hard, heavy, and susceptible of a high polish. It is seldom obtained of great size.

East India blackwood, or rosewood, is an excellent heavy wood, suited for the best furniture. It can be procured in large quantities, and of considerable size; the wood contains much oil. In large panels it is liable to split.

Satin-wood (Swietenia chloroxylon) is hard in its character, and when polished it is very beautiful, and has a satiny lustre. It is much used for picture frames, rivalling the bird's-eye maple of America. It is occasionally used by cabinet-makers for general furniture, but it is liable to split.

Sandal-wood (Santalum album) is found in abundance in Mysore and Canara. It is chiefly remarkable for its agreeable fragrance, which is a preservative against insects. It is much used in making work-boxes, walking-sticks, penholders, and other small articles of fine ornament, but cannot be procured of a large size.

Kyaboca wood (Pterospermum Indicum) is imported from Singapore. It is beautifully mottled, of different tints, evidently produced by excrescences from the tree. The wood is chiefly used for inlaying, or for making desks, snuff-boxes, puzzles, etc.—*Dr. Cleghorn in M. E. J. R. of* 1855. See Blackwood Furniture.

FURRAH-RUD or Farah Rūd, like the Murghab and the Tajend, flows from the western side of the mountainous and hilly country to the north of Herat and Kābul. Its source has not been traced, but after a course of about 200 miles it falls into the Lake of Seistan. The banks of the Furrah-rud, Khaush-rud, and other streams are well cultivated, and produce wheat, barley, pulse, and abundance of excellent melons.—*MacGregor; Elphinstone.*

FURRID-ud-DIN, a Mahomedan saint, born at Ghanawal, near Multan. He was so holy, that by his look clods of earth were converted into lumps of sugar. He was therefore surnamed Shakargunj, which means the treasury of sugar.

FURROHUR DIN JASAN. Furrohur, amongst the Parsee people, means soul or spirit; and this day is one set apart by the people of this religion for the performance of the ceremonies of the dead.—*The Parsees.*

FURS.

Fourrure, Poil, . . .	Fr.	Pelo, piel, ...	Sp.
Fell, pelz, . . .	Ger.	Kyürk, ...	Turk.
Pelle, pellicia, . . .	It.		

Furs are the skins of different animals with the inner side converted into a sort of leather, and the outer fine hair left. Previously to their undergoing this process, furs are termed peltry. The fur of the flying squirrel (Pteromys petaurista) is of such a very fine description, that it would excite much interest in Europe. The beautiful furs from Lhassa and Digurchee, in Tibet, are mostly obtainable in Khatmandu. These two large cities are great fur depots; they are only forty marches from Khatmandu.

A very large portion of the Russian fur trade is derived from this part of Tibet, and certainly by far the most valuable furs are obtained there. Some of the most beautiful dresses made of furs are brought by the native merchants from these cities; and a fur cloak with thick silk lining was purchased from one of them for 150 Moree rupees, in English money little more than ten pounds. About the beginning of the 19th century, the fur trade with China amounted to upwards of a million of dollars annually. The peltry of the American forests command good prices in the European markets. The amount carried into China over the northern frontier is, however, still considerable, though no account of the number can be obtained. Lamb-skins of various sorts are much used in the northern parts of the country.

The value of the exports of furs from British India to all parts in the year 1857-58, was £5553; next year, £4198; in 1859-60, £9603; and in 1860-61, £8216. Of the better known furs may be mentioned those of the—

Ermine, Mustela erminea, sometimes called the weasel or ermine weasel, also the stoat in summer and ermine in winter. It is found in the cold regions of Europe and Asia. Martes abietum is the pine marten of Europe.

The sable, Mustela zibellina, a native of Siberia, also the Aleutian Islands, and Thibet.

Pine marten, Mustela martes, and Martes toufæus.

Pennant's marten, Mustela Pennantii.

The mink, Mustela lutreola.

Beaver, Castor fiber.

Nutria of Brazil, Myopotamus Bonariensis.

Black or silver fox, Canis argentatus.

Arctic fox, C. lagopus.

Musk-rat, Fiber zibethicus.

Sea otter, Lutra marina.

American otter, Lutra Braziliensis.

—*Morrison's Compendious Summary; Sir R. Mongomery's Trade of the Panjab.*

FURTHER INDIA, a term applied to the Indian regions east of the Ganges. A greater variety of nations and diversity of languages are found in Further India than in any other region of equal area, and yet no one of them appears to be indigenous. The Indo-European races have crossed the Brahmaputra, and established themselves and their language in Assam. Turanian and Mongoloid races have poured in from Tibet in the north, and many tribes give indubitable evidence of Tibetan origin. On the east, the Tonquinese and Cochin-Chinese are known from their tongues to be offshoots from the Chinese, while the Malay tribes have come from the south up to 10° N., and spread their language into the Mergui Archipelago.—*Mason's Burma*, p. 17.

FU SANG. M. de Guignes in his Recherches sur les Navigations des Chinois du Côte de l'Amerique, states that under this name America is accurately described in a Chinese work of the 5th century as a land in the far east. According to M. Paravey, the Fu Sang described in the Chinese annals is Mexico, which, he says, was known as early as the 5th century of our era. Carved figures representing Buddha of Java, seated on a Siva's head, were found at Uxmal in Yucatan.

FUSTIC.

Geelhout, ... Dut.	Fustick, ... Ger.
Bois jaune de Bresil, Fr.	Legno giallo de Brasilio, It.
Gelbholz, ... Ger.	Palo del Brasillomarillo, Sp.

A dye-wood the produce of the Maclura tinctoria, *Nutt*, a large tree of tropical America and the West Indies.—*M'Culloch; Tomlinson.*

G

G. This letter is used in most of the languages of Southern Asia, but with the hard sound, as in gardener, get, gild, golf, gun. There is not, apparently, any Eastern tongue in which it has the soft sound of the languages of Europe before e and i, as in general, geometry, gin, giorno, Gerusalemme. In writing Eastern words, therefore, this letter, where it occurs, presents similar difficulties to the letter c, which Europeans make interchangeable with k, as in Cashmir, Kashmir, Cabul, Kābul. Gehoon, Hind., wheat, which has the hard sound, might, by a native of Europe, be pronounced, erroneously, Jehun; and Gentoo, a word derived from the Portuguese, and pronounced Jentoo, might be, erroneously, pronounced hard. The Arabic Jab'l, a mountain, is pronounced Gabal by the northern Arabs. Ginti, Hind., a muster, Gird, Hind., Pers., a round or circle (Scotch, a gird or hoop), are alike hard. The English letters gh are generally to be pronounced separately in Eastern tongues, as if written g'h; but in the Arabic, and taken from it into Persian and Urdu or Hindustani, there is a separate letter, the ghain, which has a combined softened guttural sound of gh, as Ghulam, a slave. Arabic has no letter gaf, or hard g.

GAB, fruits of Diospyros embryopteris (D. glutinosa), the size of a small orange; deep green, with a rusty dust; strongly astringent and mucilaginous.—*Irvine, Med. Top.*

GABA-GABA. Malay. The midrib of palm leaves, of the leaf of the sago palm, much used throughout the Moluccas for buildings and fencing. Atap is thatch made of the fringe of palm leaves, doubled down and sewed on sticks or laths of bamboo.—*Journ. Ind. Arch.* vi.

GABAR. Pers. A person not a Mahomedan, in general, but commonly a Zoroastrian, a Parsee or fire-worshipper; an idol-worshipper, an infidel; any unbeliever in Mahomedanism in general; but the word is more specially applied to a fire-worshipper. Meninski says, 'Ignicola, magus infidelis quivis paganus.' The word is more familiar to the people of Europe under the spellings Gaour and Guebre. A small remnant of fire-worhippers exists in Persia, chiefly at Yezd in Khorasan; but most of their countrymen have emigrated to India, where, especially at Bombay, they flourish under the name of Parsee. According to the dictionary, Burhan-i-Kattea, Gabar is used in the sense of Magh, which signifies a fire-worshipper, Gabar mani-i-Magh bashad, keh atash purust ast, *i.e.* Gabar means a Magh, which is a fire-worshipper. This is sometimas written, and very often pronounced, Gavr, by a change of letters frequent in Persian, as in other languages. Gavr, we learn from the dictionary Jahangiri, means those fire-worshippers who observe the religion of Zardusht (or Zoroaster), and they are also called Magh. But Origen, in the 3d century, defending Christianity against Celsus, an Epicurean, who had alluded to the mysteries of Mithra, uses Kabar as equivalent to Persians. 'Let Celsus know,' says he, 'that our prophets have not borrowed anything from the Persians or Kabirs' (Orig. contr. Cels. lib. vi. p. 291, Cantab. 1658). A Jewish writer, quoted by Hyde (Hist. Relig. Vet. Pers., cap. xxix.), declares that the Persians call their priests (in the plural) Chaberin (or Khaberin), whilst the singular, Chaber or Khaber (occurring in the Talmud), is explained by Hebrew commentators as signifying Parsai or Persians. On this subject Hadrian Reland has offered some remarks in Dissert. ix. de Persicis Talmudicis (see his Dissert. Miscell. part ii. p. 297, Traj. ad Rhen. 1706). Dr. Hyde, however, as above cited, thinks that Chaber or Chaver denoted both a priest and a layman. There can be no doubt but that the usages of a people which regard their dead are important evidences of the faith professed by them, or, if not clearly indicating it, that they may show what faith is not professed. The semi-exposure adopted by the Siah-posh has contributed probably to their being suspected to be a remnant of the Gabar, or followers of the reformer Zartusht, but no account has been heard of the least mention of fire-worship amongst them. There is the certainty that within the last three centuries there were people called Gabar in the Kābul countries, particularly in Lughman and Bajur; also that in the days of Baber there was a dialect called Gabari. We are also told that one of the divisions of Kafiristan was named Gabrak, but it does not follow that the people called Gabar then professed the worship of fire. That in former times fire-worship existed to a certain, if limited, extent, in Afghanistan, is evidenced by the pyrethræ, or fire-altars, still crowning the crests of hills at Gard-dez, at Bamian, at Seghan, and at other places. Near Bamian is also a cavern, containing enormous quantities of human bones, apparently a common receptacle of the remains of Gabar corpses; and to the present day the Parsees expose their dead on tower summits, but Tibetans, Chinese, and Hindus often lay their dead on plains or in rivers. At Murki Khel, in the valley of Jalalabad, and under the Safed Koh, human bones are so abundant on the soil that walls are made of them. There is every reason to suppose it a sepulchral locality of the ancient Gabar; coins are found in some number there.—*Ouseley's Travels*, i. p. 150.

GABBA. Hind. Carpets; a carpet made of different coloured pieces of pattu sewn together; a kind of woollen cloth.

GABET. MM. Huc and Gabet, by a route quite unexplored by any European, passed among the mountains north of Bhutan and Ava, and so made their way due east to the plains of 'the

Central Flowery Land.' M. Huc wrote an account of his travels.

GABRIEL or Jibrael, according to Mahomedan belief, the angel who has charge of all created things.

GACH or Gach'h. HIND. Mortar, plaster, fine plaster, plaster of Paris.

GACHCHA or Got, a section, a sect, a class. Amongst the Jains of Southern India there are 84 sections, castes, or classes. See Jain.

GACHCHA CHETTU. TEL. Guilandina bonduc, *L.* The Hindus, from the hostile and unapproachable character of this plant, compare it to a miser in the following padyam: 'If a miser dwell near a liberal man, he will die rather than remain a witness of his generosity, like the Gachcha under the Kalpa vriksha' (or celestial tree of desire).—*Vemana*, i. p. 7; *Fl. Andh.*

GACHI, a girdle of woollen cloth worn by men in Lahoul.

GAD, the Babylonian god of destiny.

GAD or Gadi, MAHR., also Garh and Garhi. A hill fort.—*W.*

GADARIA. BENG. A shepherd; from Gadar or Gadur, a sheep. The Gadaria shepherds of the N.W. Provinces have several divisions, who do not eat together nor intermarry. The younger brother marries the widow of the elder brother; elder brothers do not marry the widow of a younger brother. They are shepherds by caste as well as occupation. The several subdivisions in Hindustan are Neek'hur, Tusselha or Puchhade, Chuck, Dhangar, Bureyea, Pyhwar, and Bhyeatur, and of each of these there are also many subdivisions. This tribe is spread over the whole of Hindustan, but seems to be most numerous in the country between Allahabad and Farrakhabad. In some places they have resided from time immemorial. In the Agra district their subdivisions are manifold, and keep themselves distinct from one another. —*Ell. Sup. Gloss.*; *Sherring's Hindu Tribes.*

GADDA. TEL. Any edible root; an egg; the testis; also the terminal head of the date palm, eaten as a vegetable.

GADDA-GHAL is a punishment unknown in any but the Hindu code; the hieroglyphic import appears on pillars, and must be seen to be understood.

GADDI, a hill shepherd about Kangra and elsewhere. The Gaddi were enumerated by Mr. Sherring as Goalla; and Dr. Hunter classed them as Brahmans. They are really Gavei, a far inferior caste. See Gadaria.

GADELA. HIND. An elephant pad.

GADES had a temple of Melkarth, where his symbol was an ever-burning fire. It is the modern Cadis.

GADFLY, species of Œstrus, dipterous insects, attack the horse and other herbivorous animals. They undergo all their metamorphoses in the interior of the body of the animal—sometimes in that of man.

GADHA. HIND. A club, a mace, occasionally portrayed in the hands of Siva and Vishnu. A club, a mace, a battle-axe. The gada or club of Bhim-Sen is a pillar.

GADHI, a Hindu sovereign's throne; a pillow; the cushion by which a Rajput or any Hindu's throne is designated; a seat of honour, the cushion of the throne. Succession to a kingly dignity, or to the office of chief mahant of a temple, is called succeeding to the gadhi, and the occupant is said to be 'gadhi nishin.' Wilson describes it, also, as the spiritual throne of the founder of a Hindu sect; the pillow at the original site of the sect; the pillow or seat of the primitive teacher, the spiritual throne. A gadhi is literally a cushion, and is placed on a rich carpet on the ground, and forms the Hindu throne. To be raised to or seated on the gadhi is equivalent to being raised to the throne. Gadhipati, the chief of a body of religious mendicants.

GADHI. PUSHTU. A band of thieves.

GA-DI or Gari. HIND. A carriage.

GADI or Gaddi, cultivators in the Dehli district.

GADI CHAT. HIND. A grass used as fodder.

GAEEN, a small clan of Rajputs in the Zillah of Ghazipur and in Benares.

GAEKWAR, a feudatory sovereign of India, who resides at Baroda. The family are of the cowherd race, and formed part of the great Mahratta Confederacy, to whose supremacy the British succeeded. The Gaekwar family sprang in 1720 from Damaji Gaekwar Shamsher Bahadur (obiit 1768), an officer under Khandi Rao Holkar, and they ruled till the treaty with the British Government in 1802. In 1808, Colonel Alexander Walker, then resident at the Gaekwar's court, was able to arrange for payment to the Gaekwar, from ten Rajput chiefs, of a certain fixed sum as suzerainty. When the Peshwa was overthrown in 1817, the British succeeded to the chief control, with an annual tribute, in the proportion of ⅔ to the British Government and ⅓ to the Gaekwar. The tributaries are called talukdars, of whom there are 224, and each of whom possesses exclusive jurisdiction in his own district; and only the Grassia and Mul Grassia are allowed to litigate with their ruling chiefs. These are sprung either from cadets of the ruling tribe, or from proprietors of lands which they seized, and now defend with all the proverbial tenacity of the Rajput, who freely gives and takes life for acres. The territories of the Gaekwar have an area of 4399 square miles, with a population above two millions, and an annual estimated revenue in 1875 of £1,026,482, but £175,771 was not realized. The Gaekwar Mulhar Rao, on the 22d April 1875, was dethroned, and was replaced by Syaji Rao, a descendant of Pratap Rao, son of Piliji Rao, the founder of the family, and younger brother of Damaji, whose line terminated with Mulhar Rao. Mulhar Rao was sent to Madras, where he died in 1882. Lord Salisbury, when Secretary of State for India, on the 3d of June 1875, is said to have expressed the opinion of the then administration, that 'Mulhar Rao could not be treated as having been proved guilty of the crime of poisoning;' and that the stredhun, amounting in money to nearly £1,500,000, belonged to the ranas as private property.

GÆRTNERA KOENIGII. *Wight, Ic.*

G. acuminata, *Benth.* | Sykesia Koenigii, *Arn.*

Var. β.

G. thyrsiflora, *Blume.* | Sykesia thyrsiflora, *Arn.*
G. oxphylla, *Benth.*

Var. α is very abundant in Ceylon up to an elevation of 3000 feet. Var. β grows in the south of the island, at no great elevation.—*Thw.*

GÆRTNERA RACEMOSA. *Roxb.*

Hiptage madablota, *Gært.*

Maltilata, . . . HIND. | Vedala chettu, . . TEL.
Madholata, . . . SANSK. |

This is a fine and fragrant flowered creeper, and very hardy. G. Gardneri, *Thw.*, G. rosea, *Thw.*, G. ternifolia, *Thw.*, and G. Walkeri, *W. Ic.*, are Ceylon plants.—*Gen. Med. Top.* p. 192; *Thw.*

GAGAH. Sawah, tipar, of Java, are rice-fields, differing in the mode of cultivation adopted in them.

GAGH-GHO, a long shift worn by Baluch women.

GAGIANI, a Pathan tribe in the Doaba division of the Peshawur district, said to have come from the valley of the Kābul river, and to have ousted the Dalazak.—*MacGregor, N.W. F. I.* p. 511.

GAGRA. HIND. A subdivision of the Bhangi or sweeper caste. They apply leeches.—*Wilson.*

GAGRA, a plaited skirt of coarse fabric like langa, only coarser.

GAGROWN. In Hindu warfare, when the supply of water has been rendered impure, and consequently useless to the Hindus, they have been compelled to abandon their defences, and meet death in the open field. Ala-ud-Din practised this against the celebrated Achil, the Kheechie prince of Gagrown, which caused the surrender of this impregnable fortress.

GAHALAYA, an out-caste predatory race, near Matelle, in Ceylon, who acted as executioners in the times of the Kandyan kings. The people of the lowlands on the coast of Ceylon are of a Tamulian or Dravidian stock. Those of Kandy, with their habits of polyandry, would seem to be allied to the people of Coorg. The Gahalaya, Rhodia, and Veddah are wild, out-caste races dwelling in the forests and unfrequented parts.

GAHARBA. HIND. A resin used in Benares in making lacquer ware.

GAHARWAR or Gharwal, a tribe of Rajputs xtensively spread through the N.W. Provinces; ne of the 36 royal races, apparently at an early period settled at Kanouj.—*Wilson.*

GAHLOT or Gahilot. HIND. A tribe of Rajputs extensively spread through the N.W. Provinces and Rajputana. The raja of Udaipur is a member of one of their most celebrated branches, the Sisodya.—*Wilson.* See Gehlote.

GAI. HIND. A cow. Gai goru, horned cattle. Gai-kassai, a beef butcher. Gai-ran, cows' land, pasture land, a village common; all land not brought under cultivation. Gai-rūn, bezoar.

GAINA, a dwarf variety of the Bos Indicus, the Brahmany or Indian bullock.

GAINGOOL, HIND., Panam kalang, TAM., Tati kalangoo, TEL., is the young shoot of the brab palm tree, Borassus flabelliformis. It is boiled and eaten. To obtain it they dig a hole about 3 feet deep, in which they put the stone of the fruit, and cover it up with earth. About a year afterwards it is dug out, and the plant or shoot then produced is called Gaingool.

GAIRSAPA FALLS, are waterfalls on the river Cauvery, and known as the Great Fall, the Roarer, the Rocket, and the Dame Blanche. The water leaps from the first in a considerable volume from a height of 890 feet. The pool at the foot of the fall is 350 feet deep. The view into the abyss is terrific. The Roarer rushes in great volume over an inclined plane into a cavern or cup, which turns it into the bed below. The Rocket, seen from the Canara side, shoots itself out from the rocks, which break its fall, into hundreds of water rockets, which burst and pass away just like the rocket firework. The Dame Blanche is a lovely but gentle fall, sweeping down like liquid silk, or a stream of eider-down feathers. The entire chasm is tenanted by innumerable pigeons and swallows. The river is fullest in July, but the best sight is in December.—*Bishop Spenser.*

GAITA, a Gond tribe in the Rajamundry district. A tribe in Bastar who call themselves Koitor.

GAJANAMA, a name of the Hindu deity Ganesha, literally elephant-faced. See Ganesha.

GAJANDERGARH, a fortress in the southern Mahratta country, in lat. 15° 44′ N., and long. 75° 56′ E. The plain at the foot of the fort is 1996 feet above the sea.—*Schl. Herm.*

GAJAPATI. The title of a sovereign race that ruled in Orissa, but little is known of them. The name means Lord of the Elephant, and has been assumed as a title by several ancient Hindu dynasties. It is now held by a family in the Northern Circars, as Raja Gajapati Rao. In the Northern Circars, Chicacole and Rajamundry were the capitals of the Andhra sovereigns anterior to the Christian era. A more exact knowledge of these and of the early Buddhist princes of Vegi or Vengi Desam, who reigned at Dara Nagara on the Kistna, near Amaravati, and at Vengipuram, the exact site of which is not yet known, is an important desideratum.

The Kalinga Chalukya power ruled at Rajamundry and throughout the Northern Circars. Extant sasanams and sculptured remains exhibit several alternations of superiority between them and the Gajapati of Orissa.

The Ganapati or Kakateya dynasty ruled at Warangal, now in the Nizam's territory, once the capital of great part of the Northern Circars.

Of the Reddies of Condavir little is known.

The succession of the Buddhist religionists' race by the Chalukya of Rajamundry, the subsequent sway of the Ganapati, Vema Reddi, and Rayel of Bijanagar, together with their contests and the various relations between them, are little known.

GAJLHALLI or Gazzelhalli, in lat. 11° 33 N., and long. 77° 1′ E., in the Neilgherries, on the left bank of the Moyar, N.E. of Ootacamund, is 5948 feet above the sea.—*Scott.*

GAKHAI, also Gali, also Ghasha. HIND. A pass, a narrow defile.

GAKKAR, a tribe inhabiting portions of the Hazara, Jhelum, and Rawal Pindi districts. They claim to have been Mahomedans from Seistan, but they really were one of the oldest and most powerful of the Hindu dynasties of the Panjab. In combination with other rajas, they bravely opposed Mahmud on the plains of the Panjab. Their ancient boundaries were the Jhelum on the east, and the Indus on the west. They became Mahomedans shortly after Mahmud's invasions. They were friendly with Humayun and Akbar. They were kept down by the Sikhs, but have been friendly with the British. The Greek invaders found Rawal Pindi district in possession of a Scythic race of Takka in 327 B.C. 1300 years afterwards, the Musalman conqueror found

it inhabited by a fierce non-Aryan race of Gakkar. The Gakkar for a time imperilled the safety of Mahmud of Ghazni. In 1008, Ferishta describes them as savages, addicted to polyandry and infanticide. The tide of Mahomedan conquest rolled on, but the Gakkars remained in possession of their submontane tract. In 1205 they ravaged the Panjab to the gates of Lahore. In 1206 they stabbed the Mahomedan sultan in his tent; and in spite of conversion to Islam by the sword, it was not till 1525 that they made their submission to the emperor Baber, in return for a grant of country. During the next two centuries they rendered great services to the Moghul dynasty against the Afghan usurpers, and rose to high influence in the Panjab. Driven from the plains by the Sikhs in 1765 A.D., the Gakkar chiefs maintained their independence in the Murree (Marri) Hills till 1830, when they were crushed after a bloody struggle. In 1849, Rawal Pindi passed, with the rest of the Sikh territories, under British rule, but the Gakkars revolted four years afterwards, and threatened Murree, the summer capital of the Panjab, as lately as 1857. They now number only 10,153 persons, described by the British officers as a fine spirited race, gentlemen in ancestry and bearing, and clinging under all reverses to the traditions of noble blood. The Gakkar are not distinguishable from the Awan in personal appearance, both being very large fine men, but not exceedingly fair, inhabiting as they do a dry, bare, rather low country, hot in summer. At an early period of history they were given to infanticide.—*Campbell*, p. 96; *MacGreg. N. W. F. I.* pp. 511, 519; *Imp. Gaz.* iv.

GALA, a Semitic race, occupying Shoa in Abyssinia. They are one of the finest races in Africa, of a dark-brown colour, with strong hair, and well-limbed. They live in a beautiful country, extending from lat. 8° N. to long. 3° S., with a climate not surpassed by that of Italy or Greece, and speaking a language as soft and musical as pure Tuscan. They are from six to eight millions in number; amongst them are scattered Christian tribes, but the religion of the race in general is fetish, and the seven tribes of the Wollo Galla are Mahomedans. The fetishists worship the serpent as the mother of the human race, and hold their religious services under a tree. They acknowledge a Supreme Being, whom they call Heaven (Mulungu), and have a notion of a future state. There seem to be three natures or attributes in their Supreme Being, viz. Wak or Waka, supreme; Ogli, a masculine, and Ateli, a feminine, power or embodiment. They have two holy days in the week, viz. Saturday, which they call Saubatta kenna or little Sabbath, and Sunday, which is their Saubatta gadda or greater Sabbath.

GALAM BUTTER, a reddish-white solid oil obtained from Bassia butyracea.—*Simmonds' Dict.*

GALANGAL, Galanga.

Kust-talkh, . . . Arab.	Langkwa, . . Malay.
Kolangan, ... ,,	Kalgan, ... Rus.
Laun-don, . . . Chin.	Kolanjana, . . Sansk.
Galgant, ... Ger.	

A brown tuberose root, with a faint aromatic smell and pungent taste, like a mixture of pepper and ginger. It is a good deal used in China, and fetches in the London market from 12s. to 16s. per cwt. in bond. 1286 cwt. of galangal root, valued at 2880 dollars, was exported from Canton in 1850. It is mentioned by Ætius and by the Arab writers, but the plant or plants yielding the lesser and greater galangal remain unidentified, —a pepper, an iris, the Acorus calamus, Maranta galanga, and Cyperus longus, have been mentioned. Dr. Ainslie, the Rev. Messrs. Williams and Smith, considered the greater and lesser galangals to be four different plants. The former may be from species of Kæmpfera (K. galanga and K. mutans), and the latter from Alpinia (A. alba, A. Chinensis, A. galanga, and A. racemosa). A. galanga, *Willde.*, is a native of China and the Malayan Archipelago. Several species of this genus have roots with somewhat similar properties. Thus A. alba and A. Chinensis are much used by the Malays and Chinese; the former has hence been called Galanga alba of Kœnig; and the latter has an aromatic root with an acrid burning flavour. The fragrant root of A. nutans also is sometimes brought to England, according to Dr. Roxburgh, for Galanga major. Its leaves, when bruised, have a strong smell of cardamoms. According to Dr. Honigberger (p. 278), the natives of Lahore are of opinion that the root of Piper betel (panki-jar) is what the Persians call Koolian.—*Roxb.; Ains.; Williams' Middle Kingdom*, ii. 400; *Royle; Eng. Cyc.; Simmonds' Com. Prod.; Smith.*

GALANG-GALANG, the locust of Australia, is believed by the natives to excrete the manna of the Eucalyptus mannifera.

GALAPAGOS ARCHIPELAGO consists of ten principal islands, of which five exceed the others in size. All the islands are volcanic, with at least 2000 craters. Darwin saw tortoises (Testudo Indicus) weighing upwards of 200 lbs. They feed on the cactus. They drink water greedily when obtainable, which accumulates in the bladder and in the pericardium. The hideous-looking Amblyrhynchus cristatus is also there. They swim with ease, and go out to sea. A. subcristatus is another species. Both are herbivorous. At the visit of the Beagle, the birds allowed themselves to be killed by a switch. Almost every indigenous living thing is peculiar to them. Admiral Fitzroy mentions that while one side of them is covered with verdure, the other aspects are barren and parched.—*Darwin; Wallace*, p. 10.

GALATIANS, from the Greek, Gala, milk; Goala, herdsman in Sanskrit. Γαλατικοί, Galatians or Gauls, and Κέλτι, Celts, allowed to be the same, would be the shepherd races, the pastoral invaders of Europe.

GALBANUM.

Barzud, . . Arab., Pers.	Chelbeneh, . . . Heb.
O'yu, ... Chin.	Birija, ... Hind.
Mutterharz, . . . Ger.	Kinneh ka-Gond, . ,,
χαλβάνη, ... Gr.	Galbano, ... It.

This gum-resin, according to Don, occurs in commerce in agglutinated plastic masses. It is hot, acrid, and bitter, and in properties resembles asafœtida, but weaker.—*M'C.; Royle, Ill.; O'Sh.*

GALBANUM OFFICINALE. *Don.*

Nafiel, ... Arab.	Gir-Khat, . . . Pers.
Kinneh, . . . Pers.	

This plant has, from the seeds, been surmised by Professor Don to be of the tribe Silerinæ. Ferula ferulago, F. galbanifera (*Nees* and *Ebermaier*), of the coasts of the Mediterranean, the Caucasus, etc., yields copiously a secretion which

dries into a gum-resin, supposed by some to be galbanum, and Opoidia galbanifera, of the tribe Smyrneæ, has also been surmised; but Professor Don states that galbanum is yielded by G. officinale, *Don.* In the opinion of the best botanists, it is not obtained from Ferula ferulago. The gum-resin is obtained by incisions in the root and stems; the juice is cream-coloured, and soon concretes into a solid mass.—*Eng. Cyc.; Hogg; O'Sh.*

GALEECHA. HIND. Galeem, ARAB. Carpets; a woollen or cotton carpet or rug.

GALEN, A.D. 130–200 or 201? Claudius Galenus, the Jalenus of the Arabs and of all the Asiatic Mahomedans, one of the most celebrated of the ancient writers on medicine. He was born at Pergamus in Asia Minor about the autumn of A.D. 130. When 17 years of age he elected to follow medicine, and he studied under Satyrus and others; then went to Smyrna to study under Pœlops and Albinus, and subsequently proceeded to Corinth to study under Numesianus. Afterwards he travelled to Cilicia, Phœnicia, Palestine, Scyros, Crete, and Cyprus; and at 54 years of age he repaired to Rome, where his efforts to teach anatomy were hindered by the jealousy of his contemporaries. He wrote largely on medical subjects. He is supposed to have died in Sicily, A.D. 200 or 201.

GALENA, sulphide of lead, lead glance, lead ore. Plomb sulfure, FR.; Bleiglanz, GER. This is the richest ore of lead, and from which that metal is chiefly obtained. As met with in commerce, it is in heavy, shining, black or bluish lead-coloured cubical masses, having a great resemblance to the sulphuret of antimony. At the Madras Exhibition of 1857, a rich ore of argentiferous galena was exhibited from Martaban by Dr. Brandis, granular, or in minute crystals, with silver passing through it in thready veins. This ore, assayed by Dr. Scott, contained about 80 per cent. of silver lead. But the quantity of silver was found to vary in the portion examined from 70 to 300 ounces in the ton of ore. By Pattenson's mode for separating the silver crystallization, by careful, slow cooling, the process proves remunerative where only 7 ounces of silver can be obtained from a ton of metal. This is probably the ore referred to by the Rev. Francis Mason, A.M., in his publication on the natural productions of Burma, where he says the limestone of the Provinces probably contains large quantities of lead. In the valley of the Salwin there is a rich vein of argentiferous galena, which is reported to appear on the surface. Professor Mitchell, in the certificate that he furnished to Dr. Morton of the analysis, says it contains lead, sulphur, silver, gold (traces), lime, magnesia, iron, silica, and carbonic acid.

Galena containing silver occurs abundantly in the eastern part of the Shan-tung province of China, also in many of the Shan states to the east of the Irawadi river; but the most prolific mines are those situated at Bawyine, Kyouktch, and Toung-byne, near Theo-baw, to the N.E. of Mandalay. One mine, the Kampanee, yields 40 tikals of silver and 25 viss of lead from one basket of the ore, while the poorest mine gives 4 tikals of silver and 30 viss of lead. The lead mines at Baudween, Baudweengyee, and Sagaing are also argentiferous.

In the Eastern Ghats of the Peninsula of India, between lat. 14° and 17° N., and long. 78° and 80° E., between Cuddapah and Nellore, near Bussahir, Jungamrazpillay, and Jungamanipentah, it runs in lodes, 1 to 1½ inch thick, in a limestone associated with sandstone and clay, and arenaceous schists and slates. The ore contains 85 per cent. of lead. The Dhone taluk, Kurnool, is another locality from which galena was sent, in very large blocks; one piece measured about 18 inches in diameter, and weighed upwards of 3 cwt. This ore, carefully tested by Dr. Scott in 1859, was then found to contain from 53 to 70 per cent. of lead, but no silver; it was also tried at the Mint, and yielded a large percentage of lead. It has been used for some years at the Madras School of Arts for glazing pottery, and answers well for that purpose, though it is found to succeed better when reduced to the form of minium, and then ground with felspar and an alkali. It was brought to notice by Captain J. G. Russell. A re-examination of the first specimen of the Kurnool ore proved it to contain upwards of 1 per cent. of silver, or 374 ounces in the ton, the quantity of lead and silver together being only 45 per cent., which was occasioned by there being a considerable quantity of gangue disseminated through the portion examined. Another specimen, given by Col. Cotton, and also said to be from Kurnool, was found to contain 175 oz. 3 dwts. in the ton. A specimen of this unwashed ore was again analysed by Dr. Scott in 1859, and when fused with carbonate of soda and nitrate of potash, produced about 60 per cent. of metallic lead. The resulting lead, on being coupelled, furnished a bead of silver weighing 1·18 grs., which is equivalent to 96·64 oz. in the ton of ore, or 165·76 oz. in the ton of metal. Among the metallic ores holding the promise of being marketable, is the rich ore of galena or sulphuret of lead from Jungamrazpillay, in the vicinity of Cuddapah. This ore is rich in silver, and is worked by the natives on this account; but all the lead is wasted, and the silver is obtained by a tedious, clumsy, and expensive process.

Galena is found at Rupi of Kulu in the Kangra district, associated with quartz; also in the Khagula in the Shahpur district, in the Kashmir country, and in Kandahar. — *Captain Strover*, 1873; *Newbold; Powell, Handbook; Econ. Prod. Panjab*, p. 54; *M. E. J. R. of* 1857.

GALEODES ARANOIDES. Species of this genus of spiders occur in Central Asia, Tartary, and the Himalaya. The Lycosa or Tarantuloides Singoriensis (Aranea tarantula, *Pallas*), and the scorpion spiders common on the steppes, are the Galeodes aranoides (Phalangium aranoides, *Pallas*). The latter, or a congener common in Afghanistan, was there mistaken for the tarantula by Elphinstone. Both, but more especially the Galeodes (or Solpuga), are celebrated for their bites, reputed to be envenomed, though this is now denied by naturalists. G. aranoides is a terrible pest on the Astracan steppe, where its bite is much dreaded by the Kalmuks, who call it the 'black widow' (Belbussan charra). They harbour chiefly under the tufts of wormwood, and about the bones which are always to be found near a Kalmuk habitation, and also at the mouth of the deserted nests of the Spermophilus citillus, where

they collect a sort of bed of leaves. Camels seem to suffer most from these spiders, because they are most addicted to lying on the ground.

Galeodes vorax. *Hutton.* An extremely voracious spider of Northern India, which feeds at night on beetles, flies, and even large lizards, sometimes gorging itself to such a degree as to become almost unable to move, and remaining torpid and motionless for about a fortnight. A sparrow, as also a musk rat (Sorex Indicus), were put along with it and killed by it. One was seen to attack a young sparrow half-grown, and seized it by the thigh, which it sawed through. The savage then caught the bird by the throat, and put an end to its sufferings by cutting off its head. Dr. Baddeley confined one of these spiders under a glass wall-shade with two young musk rats (Sorex Indicus), both of which it destroyed. It must be added, however, that neither in the instance of the bird, of the lizard, or the rats, did the galeodes devour its prey after killing it. Capt. T. Hutton, in the eleventh volume of the Asiatic Society's Journal, makes mention of a lizard bitten by one being 'allowed to escape with only a severe wound on the side; but as it lived for some days before being permitted to run off, the bite of the galeodes would not appear to be poisonous.'—*Gosse*, p. 237; *Captain Hutton, in Jo. As. Soc. Ben.* xi. part ii. p. 860.

GALEOPITHECIDÆ, the flying lemurs, a family of mammals of the order Primates, their position in which may be thus indicated:—

Galeopithecus volans, *Shaw.* Flying lemur, flying fox.

Lemur volans, *Linn.*	Cato-simius volans, *Camelli.*
Vespertilio admirabilis, *Bont.*	Colugo, *Griff.*, *An. King.*
Flying macaco of Pennant.	Gendoo, ... JAV.
Flying cat, . . . ENG.	Kubung, . . . MALAY.

This is the only species of the genus. G. marmoratus, Philippensis, Ternatensis, rufus, undatus, Temminckii, are considered by Shaw and others to be varieties. It inhabits Burma, Penang, the Malay Peninsula, Siam, Sumatra, Java, and Borneo. It is nocturnal. They live on young fruits and leaves, and do very great injury to gardens and plantations. All day long they hang with their heads down, suspended by the claws of the hind legs to the branch of a tree, in clusters, and keep up a continuous querulous squeaking, as one encroaches on the position of another. As evening approaches, they quit their shady retreat, and are to be seen wending their flight to distant gardens. They resemble in flight a flock of crows retiring to roost. *Horsfield's Mammalia.*

GALEOPSIS TETRAHIT, the common hempnettle, is a native of cultivated ground throughout Europe and Middle Asia.

GALERIDA CRISTATA, the Alauda cristata or crested lark of Europe, Asia, N. Africa; rare in Britain, but common in India, where it is known as the charndol. It is the most abundant lark on the plains of Upper India and table-land of the Peninsula. It is a European species, though of rare occurrence in Britain; and its song, also its mode of delivery of it in the air, is not very unlike that of the sky-lark, although it does not soar to so lofty an altitude. Alauda Malabarica may be somewhat inferior to the European sky-lark, so far as regards variety in the notes, but the two birds could assuredly not be distinguished by the voice alone, nor by the mode of flight, for the common Indian lark resembles the European wood-lark in size and shape, with the plumage of the sky-lark.—*Blyth.*

GALETENG, a locality in the island of Flores, occupied by a race so called. According to the statements of Bugis traders, who had settled in Flores, that island is inhabited by six different races, speaking as many different languages, the Ende, the Mangarai, the Kio, the Roka, the Konga, and the Galeteng,—names applied from the principal places of their residence.—*Crawfurd.*

GALIACEÆ of Lindley, the madder tribe of plants; 17 species in South-Eastern Asia, viz. 1 of Asperula arvensis, *Linn.*, 11 species of Galium, and 5 species of Rubia. Madder is the only useful product of the order.—*Voigt.*

GALIKONDA or Galiparvat, literally 'Windy Hill,' a range of hills in the Vizagapatam district, Madras, lat. 18° 30′ N., long. 80° 50′ E. The two highest peaks reach a height of 5345 and 5287 feet respectively. Populated by a few miserable families of savages, who share with wild beasts the soil from which they wring a miserable and precarious existence. The climate of Galikonda is temperate all the year round. In 1859–60, a few temporary buildings for European soldiers and two officers were built. The place, however, proved unhealthy to Europeans, the men suffering much from fever.

GALILEE, Chinnereth, also Gennesareth, also Tiberias, also Bahr-ul-Tibariah, is a sea or lake formed by the river Jordan; it has many fish. Its surface is upwards of 300 feet below the Mediterranean, and it is enclosed by steep hills 300 to 1000 feet high; it is 12 miles long and 6 broad.

GALIUM VERUM, *Linn.*, was formerly used in Europe for the coagulation of milk. Its flowers are yellow. G. anglicum, aparine and tricorne are known.

GALLA, the native name of Point de Galle, the Cock's Point of the Portuguese, is supposed to be the Tarshish of the Old Testament, to which the Phœnician mariners resorted. Their Ophir has been supposed to be the present Malacca, the Aurea Chersonesus of the later Greek geographers. Galle fort was first built by the Portuguese, and afterwards re-built by the Dutch, who had dismantled it when they stormed Galle, and wrested it from their rivals, in 1640. Considerable additions have since been made by the British, to whom Galle was given up in 1796. The fort contains upwards of 500 houses and a garrison. —*Tennant.*

GALLERIOMORPHA LICHENOIDES, a little moth of Ceylon; its larva is formed on coffee trees.

GALLINÆ. *Linn.* A sub-family of birds, of the family Phasianidæ and order Rasores. The Rasores or game birds are the Gallinæ of Linnæus, the Gallinacei of Vieillot, the Pulveratrices of some authors, and are also called the gallinaceous birds. Their feet are formed for running; their bills convex, the upper mandible arched over the lower; their food, grain. Nest artless, and placed on the ground; eggs numerous. In this sub-family Jerdon includes the genera Gallus and Galloperdix. The European quail is the only real migratory bird of the Rasores; but some

other quails, bustard, and rock partridges, Pteroclidæ, wander about to different localities; and Sypheotides auritus, Ardea bubulcus, some rails, terns, and gulls, also wander. A few of the gallinaceous birds are polygamous, and their males are very pugnacious, comprising the jungle-fowls of India and Malayana, the fire-backs, the black pheasants, peculiar to the Malayan region, and the spur-fowl of India and Ceylon. See Gallus.

GALLINAGO, a genus of birds belonging to the sub-family Scolopacinæ and tribe Grallatores. They are the various snipe of Indian sportsmen.

Gallinago scolopacinus, Scolopax gallinago; Common Snipe of Europe, Asia, N. Africa. Gallingo gallinula, Scolopax gallinula; Jack Snipe of Europe, Asia, Barbara; G. nemoricola, wood-snipe, G. solitaria, solitary snipe, and G. stenura, pin-tailed snipe, are also of India.

These are migratory, coming over the Himalaya in October; but Gallinago stenura precedes them, though few sportsmen discriminate it from the common British snipe, which makes its appearance somewhat later. G. stenura is nevertheless a different bird, at once distinguished by having a set of curious pin-feathers on each side of its tail, whereas the British snipe, which is equally abundant in India, has a broad fan-shaped tail, as unlike that of the other as can well be. The pin-tailed is the common snipe of the Malay countries, and is unknown in Europe, excepting as an exceedingly rare straggler from its proper habitat, the East. The double snipe is the Gallinago major of Europe, distinct from the two species of large or solitary snipes of the Himalaya, G. solitaria and G. nemoricola. See Rhynchæa; Painted Snipe.

GALLINULA CHLOROPUS, *Linn.*, water-hen of Europe, extends to Asia, all Africa; common in India. It is known to the natives as the Jambu-kodi, Boli-kodi, Jal-murghi, Godhan, and Dakak paira. G. Burnesii, *Blyth*, is of Sind, and G. phœnicura, *Pennant*, the white-crested water-hen and others, are of India and the Archipelago. —*Jerdon.*

GALLOOR KA PATTA. HIND. A plant or sea-weed used in the cure of goitre.

GALLOPHASIS, a genus of birds generally called pheasants. The Khalij, Gallophasis albocristatus of the W. Himalaya and G. melanotus of Sikkim, produce an intermediate race in Nepal; and G. Cuvieri of Assam and Sylhet and G. lineatus of Burma interbreed in Arakan, etc., so that every possible transition from one to the other can be traced. G. Horsfieldii of *Gray and Wolf* is found in all the hilly regions of Assam, Sylhet, Tiperah, and Chittagong and Khassya Hills, up to 4000 feet. It grades into the Burmese G. lineatus, forming hybrids.

GALLS, Gall-nut, Nut-gall.

Afaz, Afis, . . . ARAB.	Gallæ, ... LAT.
Py-in-ta-gar-ne-thi, BURM.	Majakani, . . . MALAY.
Mu-shih-tsze, . . CHIN.	Mazu, Fikis, . . PERS.
Gal-apfel, ... DUT.	Galhas, ... PORT.
Galles, Noix de Galles, FR.	Mayaphal, . . . SANSK.
Gallapfel, Gallus, . GER.	Masaka, . . . SINGH.
Kekis, ... GR.	Agallas, ... SP.
Majuphal, Maiphal, HIND.	Mocha kai, ... TAM.
Galla, Galluza, . . IT.	Machi kaia, . . . TEL.

The galls of Europe are obtained from the oak; those of British India from Rhus succedanea; those of China from the Rhus semi-alata.

Galls are produced by the female of the Cynips or Diplolepis piercing the buds of Quercus infectoria and other trees, and there depositing its eggs. Dr. Falconer, when travelling in the Panjab, was informed that galls were produced on the Balloot oak, Quercus balotta. East India galls of commerce are Bussora galls re-exported from Bombay. Mecca galls are also called Bussora galls. A kind of gall is also imported from China, called Woo-pei-tze, which are said to be produced by an aphis; they are more bulky than common galls, of very irregular shape, and hollow. The galls produced on Tamarix Indica, or faras tree, are called Ma-in, and are used for dyeing purposes. They are largely gathered in the Jhang, Gugaira, and Muzaffargarh districts, as also in the Dehra Ghazi Khan districts, where as much as 500 maunds are annually collected. Galls are imported into England from Smyrna, being produced in Asia Minor; also from Aleppo, the produce of the vicinity of Mosul in Kurdistan. They are also imported into England from Bombay (sometimes to the extent of 1000 cwt.), having been first imported there from the Persian Gulf. Mr. Wilkinson observed that whenever the prices were low at Symrna, the galls came from Bombay, and *vice versa*; but the supply was never abundant from both sources in the same year. They are imported into Bombay from Basra (Bussora), probably the produce of Kurdistan and of other Persian provinces. The quantity annually imported into Britain amounts to 700 tons. They are employed in tanning, to make ink, and medicinally in infusion, ointment, and as gallic acid. They sell at £4 to £6 the cwt., and in the London market are classed as blue, green, and white. The exports from British India rose from 286,350 cwts. in 1875 to 537,055 in 1877–78, value £230,526. In China, in the absence of better food, the galls of the oak tree produced by the Cynips or Diplolepis insect are said to be eaten. — *Smith; Royle; Simmonds; Tomlinson; M'C.; Faulkner.*

GALLUS, a genus of the sub-family Gallinæ, of the family Phasianidæ. The Gallinæ comprise the jungle-fowls of India and Malayana, the firebacks and black pheasants peculiar to the Malayan region, and a small group in India and Ceylon, the spur-fowl of Indian sportsmen. The very beautiful Diardigallus prelatus, *Bonaparte*, a bird of Siam, is considered to be the link from the Kalij pheasants to the jungle-fowl, or to the firebacks. It has a peacock-like crest, a rather long, glossy black tail, the upper plumage and breast silvery grey, and the rump pale golden-yellow. Next this should come the firebacked pheasants Macartneya, with Phasianus ignitus and P. Vieillotti, large birds with black plumage, the back fiery red, and the middle tail feathers white. Next, Alectrophasis, *Gray*, founded on Lophophorus Cuvierii, *Temm.*, a very beautiful bird, and Acomus, founded on the Phasianus erythrophthalmus, similar but smaller. Next these is the jungle-fowl;

Gallus ferrugineus, *Gmel.*, red jungle-fowl.

G. Bankiva, *Temm.*

Natsu-pia, . . . BHOT.	Jangil-murgh, . HIND.
Geragogor (male) of GOND.	Parsok-tahi, . . . LEP.
Kuru (female), . ,,	Ban-kokra of . SANTAL.
Ban-murgh, . . HIND.	

It inhabits India as far west as Sind, ascends the Himalaya to a height of 4000 feet; inhabits

Burma, the Malay Peninsula, Indo-Chinese countries, and the E. Archipelago, as far as Timor.

Gallus Sonneratii, *Temm.*, grey jungle-fowl.

Phasianus gallus, *Sonneratii.*
P. Indicus, *Leach, Blyth, Sykes, Jerdon.*

Jangli-murgh, . . HIND. | Adva-kodi, . . . TEL.
Katu-koli, ... TAM. |

This does not range into the northern parts of India; part of its hackles consist of highly peculiar horny laminæ, and it is not now believed to be the parent bird of the domestic fowl.

Gallus Stanleyi, *Gray.*

G. lineatus, *Blyth.* | G. Lafayetti, *Lesson.*

Jungle-fowl of Ceylon, is peculiar to Ceylon, and greatly resembles the domestic fowl.

Gallus Temminckii is supposed to be a hybrid; it occurs in Batavia.

Gallus varius, called also G. furcatus, is met with in Java and the islands of the Archipelago as far E. as Flores. It has green plumage, unserrated comb, and single median wattle.

Gallus æneus, *Temm.*, is considered to be a hybrid between G. varius and G. Sonneratii, *Darwin, Tod.*

The Galloperdix genus comprises the spur-fowl of Indian sportsmen. G. spadaceus, *Gmelin.*, is the red spur-fowl. G. lunulosus, *Valenc.*, is the painted spur-fowl. G. Zeylonensis is the Ceylon spur-fowl.

The domestic fowl and all its many species and varieties, the Ouph of the Hebrews, the Murghi of the Mahomedans of India, and Koli of the Tamil people, though in numerous breeds and sub-breeds, have all diverged from a single type. The game breed is from the Gallus ferrugineus. Its feathers are closely depressed to the body; it is indomitably courageous, evinced even in the disposition of the hens and chickens; it is of various colours. The chief varieties are,—

Malay fowl, with body of great size, disposition savage.
Cochin or Shang-hai breed, of great size, of Chinese origin, and disposition quiet.
Bantam breed, originally from Japan.
Creepers or jumpers, from Burma, short, monstrous thick legs.
Frizzled or Kafir fowls of India, with feathers reversed.
Silk fowls, with silky feathers. This is called the Phasianus lanatus, Gallus lanatus, Coq-à-duvet, Silk fowl. Kircher describes them, out of Martini, as woolly hens, the wool of which is much like that of sheep.
Sooty fowls of India, the hens of which have a white colour, soot-stained, black skin and periosteum.

The Europe breeds, Dorking, Hamburgh, Andalusian, Spanish, Sultans, Ptarmigans, Ghoandook, Rumpless, are only known in S.E. Asia as introduced varieties.—*Cal. Rev.; Jerdon; Horsfield; Yule's Cathay*, p. 100.

GALTIGUL. HIND. The insect which occasions the manna on the Calotropis procera.

GAM, the title of the chiefs of the Singpho. Gam, amongst the Mishmi, is the head of a family.

GAMALLAVADU. TEL. A toddy-drawer; the caste following that business.—*Wilson.*

GAMBAROON, the town of Bandar Abbas, a seaport town in the province of Kirman. It is the ancient Harmozia. It is situated in a barren country, in a bay of the Gulf of Ormuz. It is fortified with double walls. It did not long benefit by the fall of Hormuz, but appears to have been nearly ruined during the reign of Nadir Shah, whose tyranny extended its baneful influence even to this extremity of the Persian empire, so that in 1750 Mr. Plaisted found there nine houses out of ten deserted. In the year 1639 there seems to have been an English factory at Bussora, subordinate to that at Gambaroon, and protected by firmans.—*Ouseley's Travels*, i. p. 165; *A Journal from Calcutta to Aleppo, etc.*, p. 11, Lond. 1758; *Kinneir's Geographical Memoir*, p. 201.

GAMBIER, catechu, terra japonica.

Pin-lan-kau, . . CHIN. | Gambia, . . . MALAY.

Gambier is extracted from the leaves and shoots of the Uncaria gambier, in Siak, Malacca, and Bittang. As brought to the market, it resembles in appearance and consistency little square blocks of yellow mud. A gambier plantation has much the appearance of brushwood of three years' growth, with leaves of a dark green colour. The plant is seldom over 7 or 8 feet high. It is much cultivated at Singapore, and is planted 6 feet asunder. The cropping of the leaves may commence when about 18 months old, but the plant is at its full growth when two years old, and its leaves and young branches may thus be cropped once in two months. The croppings are thrown into a large caldron of hot water, and boiled for 6 or 7 hours, till all the extract be inspissated into a thick, pasty fluid. This is now poured into shallow troughs a little more than an inch deep, and allowed to cool and dry, when it is cut up into little inch blocks, and is then ready for the market of Siam, Cochin-China, China, and the Archipelago, where, along with betel-nut in a leaf of the piper betel (Siri), it is largely chewed as a masticatory. The average size of the Singapore plantations were of 30 acres, and when in full bearing employed 8 men. A plantation becomes exhausted and worn out in 15 years from its commencement. As a preservative for timber, dissolve three parts of gambier in twelve of dammer oil, over a slow fire; then stir in one part of lime, sprinkling over the top; to prevent its coagulating and setting in a mass at the bottom, it must be well and quickly stirred. It should then be taken out of the caldron and ground down like paint on a muller till it is smooth, and afterwards returned to the pot and heated. A little oil should be added to make it tractable, and the composition can then be laid over the material with a common brush. As a protection against the teredo, black varnish or tar is substituted for dammer oil, omitting the grinding down, which would not answer with tar. It is largely imported into Britain; from 1846 to 1850 the average quantity entered was 1200 tons, priced at £13 to £14 the ton; in 1870, 19,050 tons. It is duty free. It is used in tanning, is employed medicinally as an astringent, as a preservative of timber exposed to water, also for canvas; the gambier may be in solution, but if applied to a ship's bottom, it should be in the form of a composition of chunam, gambier, and dammer oil. It is also recommended to be applied in house-building to protect the beams from the white ants, and in shipbuilding as a composition on the butts, and on the outside of the timber previously to planking. Gambier may also preserve timber from dry-rot.—*Jour. Indian Archipelago*, March 1850, p. 186; *Cleghorn's Panjab Report*, 1859–60, p. 7; *Statistics of Commerce.*

GAMBOGE.

Ossara rewand, .	Arab.	Rong, ...	Malay.
Tha-nat-dau, . .	Burm.	Shir-i-rewand, .	Pers.
Shie-hwang, . .	Chin.	Gomarum, . . .	Port.
Tang-hwang, . .	,,	Gokkatu, . . .	Singh.
Gutte-gum, . . .	Dut.	Goma guta o guta, .	Sp.
Gomme gutte, . .	Fr.	Gamba, ...	,,
Gummigutt, . .	Ger.	Makki, ...	Tam.
Gomma-gutta, . .	It.	Passapu-yennai, . .	Tel.

Gamboge is obtained from several plants in Southern Asia,—from the Garcinia pictoria of Ceylon, the G. Cochin-Chinensis, *Rumph.*, of Siam, the G. elliptica, *Wall.*, of Siam, Sylhet, and Tavoy; and G. morella, *var.* pedicillata, of Siam, is also said by Hartman to yield Siam gamboge. A tree common in Hu-peh, in China, is said to yield a gamboge-like substance. The gamboge of commerce is known by the names of Ceylon and Siam gamboge. Siam gamboge is usually seen in cylinders, whence its name of pipe gamboge; but it is also seen as lump or cake gamboge, in round cakes or masses, and as coarse gamboge or fragments and inferior pieces. Ceylon gamboge is seen in irregular masses. The first notice of this vegetable gum-resin is by Clusius in 1605, who described a piece brought from China by Admiral Van Neck in 1603. Two trees yielding a gamboge-like substance were first made known by Hermann in 1670, one called Goraka, Garcinia cambogia, the other Kana or edible, Hebradendron cambogioides. At present gamboge is received principally from G. morellas, G. hexandras, G. Wightii, G. Travancorica, G. xanthochymus. About 30 to 50 tons are annually imported into Great Britain, where it sells at £5 to £11 the cwt.

The composition and properties of the gamboge of Ceylon are identical, or very nearly so, with those of other gambogioid exudations. The Singhalese method of collecting the gamboge is by cutting pieces of the bark completely off, about the size of the palm of the hand, early in the morning. The gamboge oozes out from the pores of the wood in a semi-liquid state, but soon thickens, and is scraped off by the collectors the next morning without injury to the tree, the wounds in the bark soon healing, and becoming fit to undergo the operation again. Gamboge is much used as a pigment and in miniature painting; it is employed to colour varnishes and lacquers. Gamboge of Mysore is the exudation of Garcinia pictoria.—*Ainslie; Royle; O'Sh.; Cleghorn; Eng. Cyc.; W. Ill.; M'C.* See Clusiaceæ; Garcinia.

GAMBOGE BUTTER.

Mukki-tylum, . .	Tam.	Yennai, ...	Can.
Arasinagoorghy, .	Can.		

A solid oil, called cocum butter, obtained from the seeds of the gamboge tree, Garcinia elliptica, which grows abundantly in parts of the Mysore and western coast jungles. The oil is prepared by pounding the seed in a stone mortar, and boiling the mass until the butter or oil rise to the surface. Two and a half measures of seed should yield 1½ seer of butter. In the Nuggur division of Mysore it is sold at As. 1·4 per seer of 24 Rs. weight, or at £36, 6s. per ton, and is chiefly used as a lamp-oil by the better classes of natives, and by the poor as a substitute for ghi. The butter thus prepared does not appear to possess any of the purgative qualities of the gamboge resin, but is considered an antiscorbutic food ingredient.—*M. E. J. R.*

GAMBROON, a twilled cotton lining made at Khangurh.

GAMCHA. Hind. A lump of dough used in cleaning gold-lace.

GAME BIRDS of British India have been in a brief manner noticed under the heading Birds of India, and the more important will be found under their respective titles in more detail. They have been well described in a monograph by Mr. A. O. Hume, C.B. Game birds, elephants, and other wild animals are supposed to be rapidly diminishing in numbers, and a close season for elephants has been appointed. To check the indiscriminate persecution, and to give the small game fair play, Poona sportsmen proposed, that between the 1st June and 15th October partridges and quail be considered out of season, and that sportsmen agreeing to this proposition shall use their utmost exertions to prevent the sale and destruction of these varieties of game between the periods mentioned. The black or painted partridge—an excellent bird for sport or for the table, and once common throughout the Dekhan—is fast becoming extinct in all but the remote parts of the country. Small game in India is assailed by innumerable natural enemies; snakes, rats, bandicoots, ichneumons, foxes, and jackals all prey upon the eggs or the young game on the ground, while kites, buzzards, hawks, owls, and many other birds assail them in the air with a persistency that renders it surprising that game should be as abundant as it is in places where the native shikaris have no interest in destroying it by wholesale; but the latter are in fact its worst enemies, a single shikari family, accustomed to supply a market, doing probably more damage in a month than all its other enemies put together could inflict upon it in a year. They are adepts at netting and snaring, and they have calls for every kind of game bird, by which they take thousands in the breeding season, and effectually put a stop to its reproduction. Migratory birds fare better than the others; they too are persecuted in a manner which is causing them to become scarcer and scarcer every year. Hardly has the first wisp of snipe made an appearance within marketable distance of a town or cantonment, than the birds are either netted by native shikaris, or shot down by sportsmen! An October snipe is scarcely worth eating, yet, for the sake of slaying or selling him, hundreds of birds are driven harassed from haunts, where, had they been allowed to remain in peace until later in the year, they would not only have fattened to perfection, but would have attracted other hundreds to their feeding grounds to afford good sport to the sportsman. As with snipe so with wild ducks. It is hard to conceive the latter out of date in India, considering the immense flocks in which they visit us, but they are nevertheless needlessly persecuted by shikaris and others without regard to season; and good duck-shooting is no longer to be had in the vicinity of any large town or cantonment, or anywhere, we might say, within easy distance of a line of rail.

GAMELUNG. Jav. A musical instrument of the Javanese. See Bamboo.

GAMES of a country take their colour and complexion from the prevailing character of their inhabitants; and in the different physical condi-

tions of the regions in the S. and E. of Asia, the amusements of their inhabitants are widely dissimilar. In the hot climate of the plains of British India, though the young boys have their childish games, those of most of the grown men are sedentary and in-door,—play at chess, pasha or pachisi, cards, pramara (primero?), and music, the drama, jatra, pachali, kavi, bulbul fights, cock-fighting, juggling, athletics interest them; and the women of Bengal have as their games, the Ashta-kashta, the Moghul-pathan, Das-pachis, Bag-bhandi.

Kite-flying is a favourite game of the Hindu and Mahomedan men of British India, of Burma, and of China. Wrestling amongst the men of Hindustan and the Burmese is a favourite amusement; every village of Northern India has a gymnasium, and professional gymnasts perambulate the country.

The bulbul and other birds are taught to fight; cock-fighting is almost a passion in the Philippines; and in Siam a species of fish are reared for fighting.

The people of Manipur are famed for their skill on horseback at the game of hockey; slings, dandaguli, bat and ball are an amusement.

Jafar Sharif, the author of the Kanūn-i-Islam, which Dr. Herklots translated, described many games:—Adole-ke-madole; aghal-zab, also called ek-pari sab-pari; aka-mukka-danda; alam-tola; andhla-badsha; anghoti-badsha; ankh-muchani, or blind-man's buff; ardah-pardah; atha-champa; atha-chamak; atk-matk-champa; atka-matkal; bag-bakri or dragon; cheep karella or trap ball; galli-dando or tip-cat; chaugan or hockey; galli-chup-ja, hide-and-seek; and half a hundred others. Tacitus describes the baneful effects of gambling amongst the German tribes, as involving personal liberty, their becoming slaves, and being subsequently sold by the winner. In passion for play at games of chance, its extent and dire consequences, the Rajput from the earliest times has evinced a predilection, and will stand unenviable comparison with the Scythian and his German offspring. To this vice the Pandus owed the loss of their sovereignty and personal liberty, involving at last the destruction of all the Indu races; nor has the passion abated. Yudishtra of the Pandava race, having staked and lost the throne of India to Duryodhana, to recover it hazarded Draupadi. By the loaded dice of his foe, she became the goli of the Kurus. Yudishtra, not satisfied with this, staked twelve years of his personal liberty, and became an exile from the haunts of Kalindi, a wanderer in the wilds skirting the distant ocean. The spirit of gambling is evinced by several of the mercantile tribes of British India, in their daring speculativeness as to the rise and fall of prices, which far outvies all that European merchants ever indulge in. Most of the advanced nations of the Asiatic islands are gamblers, and the little fighting fish of Siam and cock-fighting are largely betted on. In Bali, Lombok, Celebes, and the Philippines, cock-fighting is quite a passion. The passion for cock-fighting is indeed impressed in the very language of the Malays, which has a specific name for cock-fighting, one for the natural spur of the cock, and another for the artificial spur; two names for the comb, three for the crow of the cock, two for a cock-pit, and one for a professional cock-fighter. The passion is nowhere carried further than in the Spanish dominions of the Philippines. There it is licensed by the Government, which derives from it a yearly revenue of about 40,000 dollars. Gambling is prohibited in British India, and by the Dutch in their Eastern possessions. It is carried on in China to a fearful extent. — *Crawfurd; Frere, Antipodes*, p. 213: *Bikmore's Tr.* p. 62; *Tr. of a Hindu*, ii. p. 8; *Tod's Rajasthan*, i. p. 179.

GAMLA. Beng. An open-mouthed earthenware vessel.

GAMPA-KAMALOO. Tel. A race of basket-makers in Bellary.

GAMUT or Hamat. This name, 'husband of the mother,' was given to Osiris. Herodotus mentions that when he was in Egypt, he was astonished to hear the very same ravishing song of Linus sung by the Egyptians, and which they had known from time immemorial, as he had been accustomed to hear sung in his own native land of Greece. Linus was Bacchus or Osiris, and the most exquisite music was called by his name. Now the name of Linus or Osiris, as the 'husband of his mother,' in Egypt was Hamat (Bunsen, i. p. 373), which in Persia and India became Gomat, and in Rome Gamut. Hence the music of the Chaldæan worship was called the music of Gamut. Gregory the Great introduced the Gregorian chants from the Chaldæans; in other words, he introduced into the church the music of Gamut. And thus it comes to pass that the name of Osiris or Gamut, 'the husband of his mother,' is in everyday use among ourselves as the well-known name of the musical scale.

GANA. In Mysore, a sect of Lingaet Hindus.

GANA. Sansk. A troop, a flock; a host of celestials in Kailasa, Siva's paradise; an attendant. Gana are dwarf figures in the sculptures of Ellora, Badami, the Vaishnava temple at Aiholli, and other places. They are represented as fat, small beings, some with faces of cats. Ganachari, Karn., a teacher, a censor. Gana devata, Sansk., a troop of deities who dwell in Ganaparita on Mount Kailasa, and Hindus recognise the following:—12 Aditya; 10 Viswa Dewa; 8 Vasa; 12 to 30 Tushita, identical with the Aditya; 49 Anila or winds; 220 to 236 Maharajika; 12 to 17 Sadhya; and 11 Rudra.—*Fergusson; Birdwood; Wilson; Dowson.*

GANAPATI or Kartakeia, a title of an ancient dynasty in Warangal, once the capital of a great part of the Northern Circars. The dynasty of Warangal, ruled from that town over a great part of the Circars, but the succession of the Buddhist Chalukya race to dominion at Rajamundry, the subsequent sway of the Ganapati, Vema Reddi, and Rayel race of Bijanagar, together with their contests and the altering relations between them, are very little known. Condavir was once ruled by a race of Reddi. See Gajapati.

GANAPATI, lord of hosts. One of many names given to the Hindu deity Ganesha, the god of prudence and policy. In Northern India he is usually styled Ganesha, but Ganapati in the south; under the name of Kartikeya he is the leader of the celestial armies, and as Ganesha and Ganapati is the god of wisdom. He is the reputed eldest son of Siva and Parvati. The Ganapatya is a limited Hindu sect, worshippers of Ganesha or Ganapati, or of his forms Baktratunda or Dhundhi raj. They are so styled because they worship

Ganesha or Ganapati exclusively. There are five grand divisions of Hindus who so worship a single divinity, uniting in its person all the attributes of Brahm, and the Ganapatya are one of the five. See Ganesha.

GANDA, in Indian currency the hundredth part of an anna; but in reckoning means to count by fours, so that ganda also means four pice, or about one anna.

GANDA-BEROZA. HIND. The crude resin of Pinus longifolia; also a preparation from the resin. It is often applied to barija or barzad, which is the rare drug galbanum, from the Boswellia thurifera.

GANDAH in Hindi dialects means perfume, aroma, odour; and several plants derive part of their compound name from this word,—Gand'h bel, Andropogon schænanthus; Mirchia gand'h, Cymbopogon iwarancusa; Gandha bute, Euphorbia helioscopia; Garba gandha, Saccharum sara; Gandhaga mara, Santalum album, sandal. Gandha banik, a druggist.

GANDAHARA, according to Bunsen, is Kandahar. It is named in the inscription of Darius Hystaspes. The Gandhara district, or Parashawa, is not mentioned by Alexander's professed historians; but is correctly described by Strabo under the name of Gandaritis, as lying along the river Kophes, between the Choaspes and the Indus. In the same position Ptolemy places the Gandaræ, whose country included both banks of the Kophes immediately above its junction with the Indus. This is the Kien-to-lo or Gandhara of all the Chinese pilgrims, who are unanimous in placing it to the west of the Indus. The capital, which they call Pu-lu-sha-pu-lo or Parashapura, is stated to be three or four days' journey from the Indus, and near the south bank of a large river.—*Cunn. An. Geog.* p. 48.

GANDAH-MADANA, in Hindu cosmogony, is one of the four boundary mountains enclosing the central region of the world, called Ilavritta, in which Meru, the golden mountain of the gods, is situated. The Puranas are rather at variance as to its position. According to the Vayu Purana, it lies on the west, connecting Nila and Nishada, the north and south ranges. The Vishnu Purana places it on the south, the western mountain being there called Vipula. It has, however, a Gandah-madana to the west amongst the projecting branches or filaments of Meru. The Bhagavat places it on the east of Meru. The Mahabharat agrees with the Vayu Purana. The Padma Purana is at variance with itself, and places it in one passage on the west, and in another describes it as on the east. According to this Purana, Kuvera resides on it with the Apsarasa, Gandharba, and Rakshasa. The Sita alighting on its top thence descends to the Bhadraswa varsha, and flows to the eastern sea. —*Hindu Theatre*, i. p. 24.

GANDAK, the name of two rivers of Hindustan. Great Gandak (known also as the Narayani or Saligrami, the Kondochatis of the Greek geographers), a river in the North-Western Provinces and Behar, rises high among the recesses of the Nepal Himalayas, in lat. 30° 56′ 4″ N., and long. 79° 6′ 40″ E. Its alpine feeders unite at Varaha Kshetra above Nat'hpur, within the hills. It rises near Dhawalagiri peak in the Himalaya, runs S.S.E., S.W., S.E. into Ganges, near Patna, after a course of 407 miles. In its course it receives the Trisula-ganga, 100 miles long; Marachangdi, 100 miles long; Naling, 110 miles long; and about 40,000 square miles are drained. Though navigable continuously through its whole course downwards from Bhelunji, there are in the part of its channel nearer that place many rapids and passes, where, the course being obstructed by rocks, navigation becomes difficult and dangerous. The upper part of the river is called Saligrami, from the fossil ammonites, called saligram, which are found in it, and which Hindus hold in veneration. The Chota or Little Gandak river passes through the Muzaffarnagar and Gorakhpur districts.

GANDAMAK, a village occupied by the Koghani tribe of Afghans. It is on an elevated site, is cooler than Jalalabad, and its people tend silk-worms. It stands in a rich spot, and has a fine view of the Safed Koh. It is 35 miles from Jalalabad on the road to Kābul. Near this, between 1839 and 1842, much fighting took place between British troops and Afghans; and on the retreat of the British from Kābul in 1852, Gandamak was the place where the last survivors of the force, viz. 20 officers and 45 British soldiers, were slain.—*MacGregor*, p. 255; *Mohun Lal's Travels*.

GANDASULI. Marsden gives this as the Hedychium coronarium of Linnæus, and adds that its flowers are worn as ornaments in the hair, and in the enigmatical language of flowers stand for inconstancy.—*Jour. Ind. Arch.*, August 1851.

GANDAVA, a town in Baluchistan, situated on the Moolla pass route, lat. 28° 32′ N., long. 67° 32′ E. A fortified place, built apparently on an artificial mound; is a great level tract, and is inhabited by three very distinctly marked races, the Jat, the Rind (including the Maghazzi), and the Brahui. The Jat seem the original race, and occupy the centre of the province.—*Imp. Gaz.*

GANDHAR, the third note of the musical scale, 'mi.'

GANDHARI, daughter of Subala, raja of Gandhara. She married the blind maharaja Dhritarashtra. Her sons Duhsasana and Duryodhana were named Kaurava, and fell in the eighteen days' battle of Kuru Kshetra. Gandhari, after the battle of Kuru Kshetra, retired with Dhritarashtra and his mother Kunti to the jungle on the Ganges, where the maharaja died.

GANDHARVA, in Hindu mythology, a shade, a spirit, or ghost; also an inferior deity of the Hindus, attendant upon Indra and Kuvera, and distinguished for musical proficiency; also heavenly choristers, a celestial musician,—these are demigods or angels who inhabit Indra's heaven, and form the orchestra at the banquets of the gods, they are skilled in medicine, regulate the asterisms, and are fond of women. They are described as the husbands of the Apsarases; but very various accounts of them are given. They are described as witnesses of the actions of men, and sixty millions in number. They are called Apsarasa, and Devangana. Their band is composed of a tambourine (tamma), cymbals or castanets (tal), a vina or lute, and a stranga, played with a bow like a violin. Gandharva is also a form of Hindu marriage, with the consent of the two parties. Gandharba in the Himalayas is a raja's kept woman, with a status below that of a wife, but higher than a concubine. Gandharva-Veda, an

appendix of the Sama Veda, is the science of music and song. It is one of the four Upa-Veda; the other three are the Ayush, Dhanush, and St'hapatya.—*Williams' Story of Nala*, p. 142; *W.* See Alaka; Hindu; Mahadeva; Vidya.

GANDHILA. HIND. A low, vagrant, predatory caste in the N.W. Provinces who make mats, and exhibit feats of activity.

GANDHRI. HIND. A perfumer who manufactures perfumes by enfleurage and distillation processes. The manufacture of the otto of roses calls forth his highest powers; it is, however, very remunerative. The Gandhri and the Mali were formerly one clan; but the Gandhri no longer is exclusively engaged in the preparation of perfumes from flowers.

GANDIVA, in Hindu mythology, a bow belonging to Varuna, given by Agni to Arjuna, one of the Pandava, before burning the forest of Khandaprestha, to enable him to combat Indra. It was used by Arjuna in the swayamvara or tournament in which he won Draupadi.

GANESA is the Hindu god of prudence and policy, and the patron of letters. He is the reputed eldest son of Siva and Parvati, and as Siva's eldest son is called Vigneswara; but is said also to have been produced without a father by the intense longing of Parvati. He is represented as a short, fat, red-coloured man, with a large belly and the head of an elephant, an emblem of sagacity. He is frequently attended by a rat, sometimes riding on one, the conduct of that animal being esteemed by the Hindus as peculiarly marked by wisdom and foresight. He has generally four hands, but sometimes six or eight, or only two. He is invoked by Hindus of all sects, in the outset of any business. If they build a house, an image of Ganesa is previously propitiated, and set up on or near the spot. If they write a book, Ganesa is saluted at its commencement, as he is also at the top of a letter. Beginning a journey, Ganesa is implored to protect the wayfarer; and, for his guardianship of travellers, his image is occasionally seen on the roadside, especially where two roads cross; but sometimes it is little else than a stone, rudely chiselled into something like an elephant's head, with oil and red ochre daubed over it, decorated, perhaps, with a chaplet of flowers by some pious neighbour or traveller. It is common to see a figure of the god of prudence in or over bankers' and other shops; and, upon the whole, there is perhaps no deity of the Hindu pantheon so often seen and addressed. When he has four arms, in one hand he holds the ankus or hook for guiding the elephant, in another a chank or shell, in the third a conical ball, and in the fourth a cup with small cakes, with which he is supposed to feed himself. Ganesa is often represented eating the batasa, sweet cake, also is sitting on the lotus. Images of him are made and set up with those of Durga, in the festivals of that goddess in Calcutta. In an invocation to a superior deity, a salutation is usually made to him; and his image is frequently seen placed as a propitiation over doors of houses and shops, to ensure success to the temporal concerns of their owners. Siddhi and Buddhi (knowledge and understanding) are represented as the two wives of Ganesa. There are not many temples dedicated to Ganesa, but his images are frequently discovered set up with those of the other deities. Ganesa has many names, among which are Lambo-dara, the long-bellied; Eka-danta, one-toothed; Gajanumu, elephant-faced; Gana-is-a, Gunnis, Ganapati, Pillaiyar, Vinayakar, etc. There are five grand divisions of Hindus who exclusively worship a single divinity, uniting in its person all the attributes of Brahma himself. One of these divinities is Ganesa, and the sectaries who thus worship him are called Ganapatya. Ganapati, more correctly pronounced Ganpati, is the chief of the Dii minores of the Hindu pantheon, as the etymology of the word indicates, and, like Janus of the Romans, was entrusted with the gates of heaven, with the right to preside over peace and war. Ganesa is the first invoked and propitiated on every undertaking, whether warlike or pacific. The warrior implores his counsel; the banker indites the words Sri Ganesh at the commencement of every letter; the architect places his image in the foundation of every edifice; and the figure of Ganesa is either sculptured or painted at the doors of the houses as a protection against evil. Though often represented as four-armed, and holding the disc (chakra), the war-shell, the club, and the lotus, Ganesa is not bifrons, like the Roman guardian of portals. In every transaction he is 'AD,' or the first, though the Hindu does not, like the Roman, open the year with his name. One of the portes of every Hindu city is named the Ganesa Pol, as well as some conspicuous entrance to the palace. Thus Udaipur has its Ganesa dwara, who also gives a name to the hall, the Ganesa deori; and his shrine is to be found on the ascent of every sacred mount, as at Abu, where it is placed close to a fountain on the abrupt face of the hill, about 1200 feet from the base. There is likewise a hill sacred to him in Mewar, called Ganesa Gir, tantamount to the Mons janiculum of ancient Rome. The companion of this divinity, the rat, indirectly receives a portion of homage, and with full as much right as the bird emblematic of Minerva.

The name Ganesa, from Gana and Isa, as also Ganapati, mean lord of the Gana. He has other names,—Dwi-deha, double-bodied; Eka-danta or Eka-danshtra, single-tusked; Gajanana, Gajavadana, and Kari-Mukha, elephant-faced; Heramba, boastful; Lamba-karna, long-eared; Lambo-dara, pendent-bellied; Vighnesa or Vighna-hari, remover of obstacles.

Ganesa-janani, the mother of Ganesa; from Janna, birth. —*Moor; Tod's Rajasthan*, i. pp. 590–91; *Dowson.*

GANESA-GITA is the Bhagavad-gita with the name of Ganesa substituted for that of Krishna. It is used by the Ganapatya sect.

GANESH, an elephant with one tusk, held in reverence by Hindus.

GANESH CHATURTHI or Ganesh-chauth, also Pillayar Chatturthi, a Hindu holiday. On this day, which falls about the beginning of September, on the fourth day of the new moon, was formed Ganesh, called also Ganapati, made from the turmeric and oil of the head of Parvati. Ganapati has a man's body with the head of an elephant; his head is said to have been cut off or destroyed by Siva, when Ganesh tried to prevent Siva intruding on the privacy of Parvati when bathing. Clay images of Ganesh are made and worshipped for from one to nine days, and are then thrown into water. The Chinchor or Chinch-

wad, who resides at a village of that name near Poona, is believed to be an incarnation of Ganesh, who promised an ascetic named Moroba, who lived in Sivaji's time, that he would be incarnate for seven generations in his family. The earth image of Ganesh is one of three forms in which the earth deity Mrittika is worshipped by Hindus. The first is the Naga-panchami, in which feast a snake of clay is worshipped; the second is Gokul-ashtami, when a clay image of the infant Krishna is worshipped; and the third occasion is that on which Ganesh is worshipped, and this last day of the worship of Mrittika is observed with great pomp. The feast in honour of his birth, which is held on the 4th of the month Bhadrapad, and falls on the first days of September, seems to have some connection with the seasons of the year. The image of Ganesh is brought to the house with much pomp.

GANGA is a term applied to the sacred rivers of the Hindus, of which there are several in India, —Ganges, Godavery, Kishna, Cauvery. The most sacred of the rivers is the Ganges. Ganga-jal or Ganga-jala, is swearing by its waters; Gangalobh, also Ganga-prapti or Ganga-yatra, committing a dead body to the river, or a Hindu brought to die there.—*W.*

GANGA, in Hindu mythology, the personified goddess of the river Ganges, the source of which the Saiva sects place in Siva's hair; whence, in graceful flow, she

'sprung radiant,
And, descending, graced the caverns of the west.'

The Vaishnava sects assert that it flowed out of Vaikuntha, from the foot of Vishnu, and, descending upon Kailasa, fell on the head of Siva, who shook some drops (Bindu) from his hair, and these formed the great lake called Bindu Sarovara, far to the north of Hindustan. Sometimes the Ganges is fabled to issue from a cow's mouth, and the cleft in the Himalaya is called Gungotri and Gaomukhi. Others make it arise from water poured by Brahma on the foot of Siva; others, from the feet of Brahma; and others, from the fingers of Parvati. The Ganga is also called Dasahara or ten removing, as bathing in her waters on the tenth day of the month Jyaisha effaces ten sins, however heinous soever, committed in ten previous births. One of the holiest spots of the Ganges, is where it joins with the Jumna, near Allahabad, though, with Hindus, the sangam or confluence of any river is a spot peculiarly revered. A person dying at the confluence of the Ganges and Jumna is supposed to be certain of immediate moksh or beatitude, without risk of further transmigration. Professor Wilson, in his translation of the Mudra Rakshasa, describes Ganga as

'by the autumn led,
Fondly impatient, to her ocean lord,
Tossing her waves, as with offended pride,
And pining fretful at the lengthened way.'

Though, as above related, the honour of having given birth to this goddess, the personification of the sacred stream of the Ganges, has been claimed for their deities both by the Saiva and Vaishnava sects, all sects and castes of Hindus worship this goddess of their sacred stream. Numerous temples are erected on the banks of the river in honour of her, in which clay images are set up and worshipped. The waters of the river are highly reverenced, and are carried in compressed vessels to the remotest parts of the country; from whence, also, persons perform journeys of several months' duration, to bathe in the river itself. By its waters the Hindus swear in courts of justice. Mr. Ward says there are 3,500,000 places sacred to Ganga; but that, according to Hindus, a person either by bathing in or seeing this river, may be at once as much benefited as if he visited the whole of them. For miles near every part of the banks of the sacred stream, thousands of Hindus of all ages and descriptions pour down every night and morning, to bathe in or look at it. Persons in their dying moments are carried to its banks to breathe their last, by which the deaths of many are frequently accelerated; and instances occur where such event has thereby been actually caused. The bodies are then left to be washed away by the tide, and numbers of them are to be seen floating up and down with every flood and ebb, or lying all along the banks, with vultures, adjutant birds, carrion crows, and kites about them, feeding upon the remains. Several festivals are held during the year in honour of Ganga. She is described as a white woman with a crown on her head, holding a water-lily in one of her hands, and a water vessel in another, riding upon a sea animal resembling a crocodile, or walking on the surface of the water with a lotus in each hand. There are other myths relating to Ganga. The river goddess has some of the attributes of Pallas, being, like the Athenian Maid (Ganga never married), born from the head of Jove. The bard of the silver age makes her fall from a glacier of Kailas (Olympus) on the head of the father of the gods, and remain many years within the folds of his tiara (jit'ha), until at length, being liberated, she was precipitated into the plains of Aryavarta. It was in this escape that she burst her rocky barrier (the Himalaya), and on the birth of Kumara exposed those veins of gold called jambunadi, in colour like the jambu fruit.

The river goddess, like the Nile, is the type of fertility, and, like that celebrated stream, has her source amidst the eternal glaciers of Chandragiri or Somadri (the mountains of the moon),—the higher peaks of the gigantic Himalaya,—where Parvati is represented as ornamenting the tiara of Iswara with a beamy moon. In this metaphor, and in his title of Somanat'ha (lord of the moon), we again have evidence of Iswara, or Siva, after representing the sun, having the satellite moon as his ornament. The Egyptians, according to Plutarch, considered the Nile as flowing from Osiris; in like manner the Hindu poet describes the fair Ganga flowing from the head of Siva, and Sir W. Jones thus classically paints the myth in his hymn to Ganga:

'Above the reach of mortal ken,
On blest Coilasa's top, where every stem
Glowed with a vegetable gem,
Mahesa stood, the dread and joy of men;
While Parvati, to gain a boon,
Fixed on his locks a beamy moon,
And hid his frontal eye in jocund play,
With reluctant sweet delay;
All nature straight was locked in dim eclipse,
Till Brahmins pure, with hallowed lips
And warbled prayers, restored the day,
When Ganga from his brow, with heavenly fingers prest,
Sprang radiant, and descending, graced the caverns of the west.'

According to another legend, the goddess Mera,

daughter of Meru, became the spouse of Himavati, from whose union sprang the beauteous Ganga, and her sister Ooma. Ganga was sought in marriage by all the celestials; while Ooma, after a long life of austerity, was espoused by Rudra. But neither sister was fortunate enough to have offspring, until Ganga became pregnant by Hutashna (regent of fire), and Kumara, resplendent as the sun, illustrious as the moon, was produced from the side of Ganga. The gods, with Indra at their head, carried him to the Krittikees to be nursed, and he became their joint care. As he resembled the fire in brightness, he received the name of Skanda, when the immortals, with Agni (fire) at their head, anointed him as general of the armies of the gods. The festival of the birth of this son of Ganga, or Januvi, is on the 10th of Jeyte. Sir W. Jones gives the following couplet from the Sancha:—'On the 10th of Jyaisht'ha, on the bright half of the month. on the day of Mangala, (a) son of the earth, when the moon was in Hasta, this daughter of Jahnu brought from the rocks, and ploughed over the land inhabited by mortals.'—*Cole. Myth. Hind.* 119.

GANGA-BUL. Tib. Literally, place of the Ganges. A sacred lake on the mountain of Haramuk in Kashmir. It lies under the wildest and most lofty peaks of the mountain; is 1½ miles long and 200 or 300 yards wide, and is about 12,000 feet above the level of the sea.—*Vigne.*

GANGA-DHARA. Sansk. Bearer of the Ganges, a name of Siva.

GANGA-DWARA. Sansk. The gate or defile or passage of the Ganges; the modern Hardwar. In the Gaelic, Dwara becomes Dorras, in English a door.

GANGA-JAMNI, work in silver and gold combined, as with a silver ground and gold flowers, etc.

GANGA-KANDAPUR, in Tamil, Ganga-kandapuram, or city visited by the Ganges, a small town in the Madras Presidency, in lat. 11° 12′ 30″ N., long. 79° 30′ E., population (1871) 1014. Close to the village is a temple consisting of one large enclosure, measuring 584 feet by 372. The Vimana in the centre of the courtyard is a very conspicuous building, the pyramid surmounting it reaching a height of 174 feet.—*Imp. Gaz.*

GANGAPUTRA, a tribe of inferior Brahmans, who claim a right to attend pilgrims and direct their ablutions at Benares, and other holy places on the Ganges. At Benares, where they are most numerous, they claim a hereditary right to the bank between high and low water mark. Some follow agriculture.

GANGES, the great river of Northern India, is formed by the drainage of the southern ranges of the Himalaya. It rises in the Garhwal state, in lat. 30° 56′ 4″ N., and long. 79° 6′ 40″ E., and falls into the Bay of Bengal after a course of 1557 miles. It has been known to Europe from very early times. The fleets of the Egyptian kings sailed to it round the Peninsula of India and Ceylon. Seleucus Nicator is said to have penetrated to the mouth of he Ganges, and it had been sailed up by the Romans as far as Palibrotha before the time of Strabo. Its valley seems to have been peopled by several races long before the Aryan Hindus arrived there, and many of the conquerors who have entered India from the north-west have striven to occupy the fertile valley of this great river. Hindu poets have celebrated its praises in a multitude of songs. The river is fabled in their mythology to be the goddess Ganga; they long to see it, to bathe in its waters and be purified from their sins, and at last to die on its banks, or to have their bones conveyed to it from the most remote parts of India. No Hindu raises such a question as in 2 Kings v. 12, for the Ganges is recognised as the most efficacious of all the Hindu sacred rivers. On its banks have dwelt the chief of the religious reformers whom India has seen. Its valley was the cradle of Buddhism, which, from its rise in the sixth century before Christ, gradually spread over the whole of India, was extended by Asoka to Kashmir and Kābul, shortly after Alexander's invasion, and now prevails amongst 222 millions of men. Numerous dynasties have ruled there. The Andra race was in power in the Gangetic province of India about the beginning of the Christian era, but the most enduring was the great Kshatriya family that long ruled at Indraprestha, and terminated with Prithi-raj in A.D. 1200.

The whole valley is now part of British India. The river issues from the mountains at Gangotri, at an elevation of 13,800 feet, and is there known as the Bhagirathi. It issues from beneath a great glacier, thickly studded with enormous loose rocks and earth. The glacier is about a mile in width, and extends upwards of many miles, towards an immense mountain covered down to its base with perpetual snow, its glittering summit piercing the very skies, rising 21,000 feet above the level of the sea. The chasm in the glacier, through which the sacred stream rushes forth into the light of day, is named Gangotri and Gaomukhi, the Cow's Mouth, and is held in the deepest reverence by all Hindus; and the regions of eternal frost in its vicinity are the scenes of many of their most sacred mysteries. The Ganges enters the world no puny stream, but bursts forth from its icy womb a river thirty or forty yards in breadth, of great depth, and very rapid. From the source at Gangotri it runs in a generally south-easterly direction to Allahabad, to Sikrigalli, and into the Bay of Bengal, by numerous mouths, having given off some of its waters to form the Hoogly, and it also anastomoses with the Megna. In its course it receives the Jumna, 860; Gogra, 606; Gandak, 450; Gumti, 482; Sone, 465; Kosi, 325; Ramganga, 373; Mahanadi, 240; Karumnassa, 140; Koniae or Jamuna, 130; Alaknanda, 80; Bhillung, 50 miles. 39,000 square miles are drained, exclusive of Hoogly. The Ganges is navigable for river craft as far as Hardwar, 1100 miles; steamers ply as far as Gurmukteesur, 393 miles above Allahabad, distant from Calcutta *via* Dehli 930 miles; at Cawnpur, 140 miles above Allahabad, the navigation is plied with great activity. It falls rapidly to Hardwar, which is 1300 miles from the mouth. At Allahabad, 840 miles from the sea, it receives the river Jumna, which rises at the south-western base of the Jumnotri peaks. At about 240 miles from the coast it begins to divide into branches. The two on the west, called the Bhagirathi and Jalingi, unite to form the river Hoogly; the other stream passes to the Brahmaputra, with which the waters mingle, and are known as the Kartinassa river. The Ganges receives from the left bank the Ramganga, Gumti, Gogra, Gandak, Kosi, and Mahanadi; and from the

right bank, the Kali, the Kali Naddi, Jumna, and Sone. Some of these are equal to the Rhine, and none smaller than the Thames, besides many others of lesser note. It is owing to this vast influx of streams that the Ganges exceeds the Nile so greatly in point of magnitude, while the latter exceeds it in length of course by one-third. In the plain of the Ganges are the provinces of Bengal, Behar, the Doab or Mesopotamia of the Jumna and Ganges, Oudh, and Rohilkhand. It is of exuberant fertility. The population of the Gangetic Doab is 800 to the square mile. The chief towns on the banks of the Ganges are Hardwar, Bijnour, Farrakhabad, Cawnpur, Mirzapur, Benares, Ghazipur, Patna, Monghir, Bhagulpur, Rajmahal, Rampur, Pubna. Calcutta is below the sea level; Benares 265 feet above it; Allahabad 305 feet, and Agra 670 feet. The pre-eminently sacred spots on its banks are Gangotri, Hardwar, Allahabad, Benares, and Saugor Island, which are frequented by thousands of pilgrims from every province of the Peninsula.

The Gangetic Delta is an extensive tract of cultivated and forest-covered country, composed of alluvial or transported soil brought down the country by the Ganges and Brahmaputra rivers and their numerous tributaries, the water-sweepings of two basins whose aggregate area is 432,480 square miles. The Delta is intersected from north to south by many broad rivers, and by endless creeks running one into the other, filled for the most part with salt water when near the sea. This tract of land occupies approximately 28,080 square miles of superficial area, or double the area of the Delta of the Nile. Measuring from west to east, or from the right bank of the Hoogly river opposite to the Saugor tripod on the south-west point of Saugor Island, to Chittagong, it is 270 miles in width, presenting to the Bay of Bengal a series of low, flat mud-banks, covered at high water and dry at low water. A few miles from low-water mark commence mangrove swamps; a little further inland, trees appear, and lastly cultivation,—the nearest cultivation in the central portion of the Delta being 47 miles from the sea. In the sea front of the Delta there are nine principal openings having a head stream, that is, having water flowing direct from the Ganges, or from the Megna or Brahmaputra. They are—1, the Ganges; 2, the Megna or Brahmaputra; 3, Horinghatta; 4, Pussur; 5, Murjatta or Kagga; 6, Barapunga; 7, Mollinchew; 8, Roymungul or Juboona; 9, Hoogly. Besides these large rivers, there are numerous openings having no head stream, being mere salt-water tidal estuaries. These openings or headless rivers are the deepest, as no silt or deposit is poured into them from the higher lands. The tides in the Hoogly run with a rapidity in the springs of seven miles an hour, between Saugor and Calcutta. At Calcutta it is high water about 2 hours 30 minutes on full and change of the moon. The bore is of not unfrequent occurrence in this river.

This river's annual rise begins in the end of April, and continues to increase till the middle of August, when it reaches in many places 32 feet, and the level districts in its lower course are inundated. At Benares, after the Ganges has received the waters of its tributaries, the Kali Naddi, the Gumti, and others, the breadth varies from 1500 to 3000 feet; the average discharge each second of the year has been estimated at 250,000 cubic feet. By the latter end of July, all the lower parts of Bengal contiguous to its banks are overflowed, forming inundations of a hundred miles in width, where little appears above the surface of the flood save isolated villages and trees. Barks of every kind then steer a direct course, husbandry and grazing are alike suspended, and the peasant sculls his boat across the fields. In some parts of Bengal, whole villages are every now and then swept away by changes in its course, through districts from which, a few years before, it was several miles distant.

The Bhagirathi, Jalangi, and Matabhanga, are all offshoots of the Ganges, which unite to make up the headwaters of the Hoogly. In former times, the main volume of the Ganges was carried to the sea by one or other of these channels, but they now receive so little water as only to be navigable in the rainy season, and then with difficulty. Since the beginning of the present century, Government has undertaken the task of preventing these Hoogly headwaters from further deterioration. A staff of engineers is constantly employed to watch the shifting bed, to assist the scouring action of the current, and to advertise the trading community of the depth of water from time to time. In the year 1877–78, a total sum of £9522 was expended on this account, while an income of £32,494 was derived from tolls.

The Ganges river basin embraces 391,100 square miles. Average discharge at Hardwar, when the river is at its lowest, 7000 cubic feet per second; at Rajmahal, a high flood discharge of 1,800,000 cubic feet per second, and an ordinary discharge of 207,000 cubic feet. The Ganges during its minimum discharge at the Bhagirathi head in April has a breadth of surface of 2800 feet, an average depth of 15 feet, its sectional area 42,000 square feet; and multiplying this with its mean velocity of 1·92, gives its discharge per second as 80,660 cubic feet. During the inundation the breadth of surface is 10,633 feet, average depth 30 feet, sectional area 318,990 square feet, mean velocity 4·25 = 1,355,707 cubic feet discharge per second.

The Ganges near the delta has frequently altered its course. Colonel Colebrooke mentions that, between 1779 and 1788 such an alteration had occurred at Colgong, making a new channel 90 feet deep, above which the earth rose 25 feet, a removal of 115 feet of earth. Entire fields at times are hurled into the river, and large islands disappear rapidly when the power of the main current is made to bear on them. Budh-Ganga, also Burha Ganga, is an old bed of the Ganges traceable below Hastinapur, Soron, and Kampil.—*Hooker, Him. Jour.; Markham's Himalaya, Cal. Rev.; Royal Sanitary Commission Rep.; Imp. Gaz.*

GANGES CANAL, an important irrigation work and navigable channel in the North-Western Provinces, passing through the eastern portion of the Upper Doab, and watering a large tract of country, from Hardwar to Cawnpur, extending from lat. 26° 30′ 30″ to 29° 57′ N., and from long. 78° 13′ to 80° 21′ 15″ E. From the Ganges at Cawnpur to the Jumna at Agra the distance is nearly 200 miles. All this long tract is unwatered by a single natural stream. To remedy this the great Ganges Canal was projected by Sir Proby Cautley, K.C.B., during the administration of Lord Dalhousie. It was commenced in 1848, and was

opened in 1854. Its principal head is 2½ miles from Hardwar. At the 18th mile above Roorkee the canal crosses the Solani river. From this point the main canal follows the watershed between the Ganges and Jumna for 181 miles to Nanun. From Nanun the eastern branch continues 170 miles to Etawa, where it falls into the Jumna, and the western branch of the same length falls into the Ganges at Cawnpur. There are two smaller branches of 83 and 10 miles long. It has an irrigating capacity of 1,205,000 acres. It has been an unfortunate canal; up till remodelled in 1866, it could not carry its full supply. Up to the end of 1872-73 it cost for works and distributing channels £2,187,740.

The Lower Ganges Canal, an important irrigation work in the North-Western Provinces, designed to water the whole southern portion of the Doab.—*Imp. Gaz.*

GANGONDRAM, a brick structure at Negapatam, supposed to be a Buddhist work.

GANGOTRI, mountain temple in Garhwal state, Panjab; lat. 30° 59′ N., long. 78° 59′ E., and 10,319 feet above the sea. It stands on the right bank of the Bhagirathi or Ganges, 8 miles from its source, in a small bay or inlet, surrounded by a wall of unhewn stone. The temple is a square building about 20 feet high, containing small statues of Ganga, Bhagirathi, and other mythological personages connected with the spot. Near the temple the scenery is grand. Four peaks rise there, huge, lofty, covered with snow, and the river runs impetuously in its shingly bed, the stifled sound of the stones which it rolls along, mixing with the roar of its waters. Soorgarounee is the nearest of the peaks, and forms the western point of the great snowy hollow. Rudra Himala is the eastern, and forms the other point; but from that point runs down a huge snowy shoulder, that seems to give off or end in the mountains that surround, and form a great unbroken, though unequal, snowy ridge, bounding and confining the glen of the Bhagirathi. The other three peaks form different points in the back of the immense hollow, and altogether compose one of the most magnificent and venerable mountains, perhaps, that the world can produce.

Below Gauri Kundah the river falls over a rock of considerable height in its bed, and continues tumbling over a succession of petty cascades or rapids nearly all the way to Mianee ka Gad'h. Above the debouch of the Ked or Ganga, the bed widens into a small shingly space, in which the river rapidly rolls. A bridge has been thrown across, and above the bridge is the small temple dedicated to the goddess Ganga or Bhagirathi. It is built on the sacred stone on which, as Hindus believe, Bhagirathi used to worship Siva Mahadeo. —*J. B. Fraser, in Jam. Ed. Journ.* 1820, iii. p. 229; *Fraser's Himalaya Mountains; Herbert; Hodgson.*

GANGRI or Kailas, a mountain range which extends in one unbroken chain from the source of the Indus to the junction of the Shayok, and forms the natural boundary between Ladakh, Balti, and Rongdo on the south, and Ruthog, Nubra, Shigar, and Hunnagar on the north. It has six passes, at heights from 15,000 to 18,105 feet. Gangri, in Tibetan, means ice-mountain. Kailas means crystalline or icy, and is derived from Kelas, crystal, which is itself a compound of Ke, water, and Las, to shine. Kailas, or Ice Mountain, is the Indian Olympus, the abode of Siva and the celestials. The Tibetans look upon Ti-se or the Kailas Peak as the highest mountain in the world. Near the Gangri range, four rivers take their rise,—the Indus, called Sing Chin Kamba or Sing Jing Kamba, the Map-chu Kamba or Karnali, and the Brahmaputra, called to the eastward Tamjyak Kamba, also the Lang Chin Kamba.

GANGUA, a valuable timber tree of the Andamans.

GA-NHAT, a god of the Singpho.

GANITRUS SPHÆRICUS. *Gærtn.* Its nuts, cleared of the soft pulp or flesh that covers them, are curiously sculptured, and, being hard and taking a fine polish, they are frequently set in gold and strung into necklaces. Ganitrus sphæricus is a middle-sized tree, common in various parts of India, as well as the Malay Archipelago. Its nuts, and those of Monocera tuberculata, *W. and A.*, from the forests of Travancore, also those of Elæocarpus lanceæfolius, are what are principally used as beads.

GANJ, Hind., is a mart or market; a granary, especially one of grain; and in Bengal and Hindustan is applied to any village or town which is an emporium for grain and other necessaries of life. It is used as an affix to proper names, as Islam-ganj, Hurdoa-ganj, Captain-ganj; just as chip or chipping, which are of the same meaning as Ganj, is in England, as Chipping-Sodbury, Chep stow, Chippen-ham, Cheap-side.

Ganj-i-Shahid, a sepulchral mound where Mahomedans have fallen and been buried.—*Elliot.*

GANJA. Hind., Tam., Tel. Hemp-plant.

Kanub, ... Arab.	Ging-i-lacki lacki, Malay.
Ma-fuen, Chu-tsao, Chin.	Ganjika, Bijiah, . Sansk.
Gindshi, ... Jav.	

The dried hemp plant which has flowered, and from which the resin has not been removed, is called ganja. It sells for 12 annas to 1 rupee the seer in the bazars. It yields to alcohol 20 per cent. of resinous extract, composed of the resin (charras) and green colouring matter (chlorophylle). Distilled with a large quantity of water, traces of essential oil pass over, and the distilled liquor has the powerful narcotic odour of the plant. The ganja is sold for smoking chiefly. The bundles of ganja are about 2 feet long, and 3 inches in diameter, and contain 24 plants. The colour is dusky green, the odour agreeably narcotic, the whole plant resinous, and adhesive to the touch. The natives cut the plant when in flower, allow it to dry for three days, and then lay it in bundles averaging one seer weight, which are distributed to the licensed dealers. The best kinds are brought from Gwalior and Bhurtpur, and it is also cultivated of good quality in a few gardens round Calcutta. In Jessore the drug is known to be produced of excellent quality, and to a very considerable extent of cultivation. In the north of Africa, South America, Turkey, Egypt, Asia Minor, India, and the adjacent territories of the Malay, Burmese, and Siamese, hemp and its products are used in various forms by the dissipated and depraved, as the ready agent of a pleasing intoxication. The leaves or young leaf-buds of the hemp plants are smoked by itself, or rubbed between the hands and added to tobacco to impart an intoxicating power.—*Faulkner; Royle; Waring; Birdwood.*

GANJAM, a small seaport town in lat. 19° 22′ 27″ N., long. 85° 2′ 52″ E., with a population of 4163 souls. It gives its name to a revenue district in the north-east of the Madras Presidency lying between lat. 18° 15′ and 20° 15′ N., and between long. 83° 49′ and 85° 15′ E.; area 8313 square miles, population 1,520,088. The chain of the Eastern Ghats is here known as the Maliya; and its peaks are—Mahendragiri, 4923 feet; Singharaj, 4976; and Deodonga, 4534. Ganjam anciently formed part of the southern kingdom of Kalinga, and it was not until the long line of Gajapati or Ganga Vansa kings (1132–1532) occupied Orissa that the adjoining district of Ganjam was annexed to that province. It suffered from famines in 1789, 1791, 1800, 1836, 1866; and in the last about 60,000 of the people were lost. The town of Ganjam was nearly deserted in 1815, in consequence of fever. The district contains several petty chieftainships, and it embraces a large portion of the mountainous tracts known as Khondistan, and the valley of Chocapaud. Chilka lake, in Ganjam, is 35 miles long and about 8 broad, with numerous islets. The aboriginal tribes inhabiting the hill tracts are principally Kandh (55,735) and Saura (21,656), who have now nearly all embraced some form of Hinduism. During a campaign in 1836, it became known that the Khand were addicted to sacrificing human beings, and the rite has now (1882) been suppressed. Uriya are chiefly found in the north of the district, extending as far south as Parla Kimedi. South of Kasibuga, and throughout the Chicacole division, the larger number of the inhabitants are Teling. The Uriya language prevails in the northern part of the districts, as far south as Itchapore. In the southern division the Telugu prevails. The Khand race have a language peculiar to themselves, which was reduced to writing by Captain J. P. Frye of the Madras N. I. Of the inhabitants, about 450,000 are Uriya. Many of the Uriya Brahmans obtain their livelihood as cultivators. Brahmans of this sect also trade, and follow the occupations of brickmakers, bricklayers, etc. The chief towns of the Ganjam district are Berhampur, Chicacole, Parla-Kimedi, and Kalingapatam. Chicacole is the principal civil station in the Ganjam district. It is in lat. 18° 18′ N., long. 83° 58′ E., about 567 miles from Madras, and has 15,587 inhabitants. It lies four miles direct west of the sea, and is situated on the north bank of the river Languli[illegible]. It is the station of the judge and the sub-collector.

GANJ-i-BAR, a bald tract in the central dorsal plateau, in the Manja or middle part of the Bari doab. The soil of the Ganj-i-Bar is intensely arid, often saline, and produces only some salsolaceous plants, with a few bushes of jhand.

GANNA. HIND. Saccharum officinarum, sugar-cane. The name differs but little in almost all languages to express the same object,—Hebrew Kaneh, Arabic and Persian Kunnat, German Kanne; Greek, Latin, Italian, Spanish, and Anglo-Saxon, Canna; and hence the English cane and sugar-cane, and the many words derived from it, which are applied to vessels and utensils bearing resemblance to the shape of hollow reeds, as can, canakin, canal, canister, and canoe, which latter is evident from the passage in Juvenal (Sat. v. v. 89). Minshen ascribes a similar origin to the word gun: 'Gune, ex Lat. canna, quia consistit canna ferrea;' regarding which it is to be observed that no one has succeeded in giving a better etymology. From the Hebrew name is the Haneh, or measuring reed of the Jews, equal to six cubits, which has its counterpart in the Bans or bamboo measure of the Hindus; the Roman Decempes and the Greek Akaina, all of six cubits or ten feet.—*Elliot.*

GANNET, a sea-bird, the Sula alba, which measures about 5 feet across, and 2¾ feet long. Also the Pelecanus bassanus.

GANONG, generally called Ayen Panas, hot springs in Nanning. All the hot springs of the Malayan Peninsula, and some of those in Sumatra, occur in swampy flats. That of Ganong occurs at or close to the line up to which plutonic action has converted the rocks of the district into granite.

GANPATI, the Hindu god of wisdom. See Ganapati; Ganesa.

GANTA BHARANGI. TEL. A species of Clerodendron, a low herbaceous plant, common about Lamsingi in Vizagapatam; the roots are largely exported for medicinal purposes.

GANTH, also Gant'hi. HIND. A knot. Mahomedans usually keep a string for their children, on which they tie a knot each birthday; hence Baras-gant'h, a birthday knot, a birthday. In land revenue the twentieth part of a mana or bigha.

GANTHA, a bell. One is used in the holy ceremonies of Hindus, and is rung at certain times to keep away evil spirits. These bells, as well as the lustral spoons, are usually surmounted by the figure of the deity in whose worship they are used.—*Cole. Myth. Hind.* p. 380.

GAO, written also Ganw or Gaon. HIND. A village. Travellers in India reckon the day's distance of journeys by the Gao or village. Das Gao would mean ten days' journey.

GAO. HIND., ZEND. A cow. In Hinduism, the Gao or cow is symbolic of Prit-ha, the earth. Gao has numerous combinations. Gao-char or Gao-charhai, pasture land kept free from cultivation, as the grazing ground of the village. Gaodana or Godana, the gift of a cow to a Brahman or to a bridegroom, or at a religious ceremony. Gao-kos is the distance that is measured by the audibleness of the bellowing of a cow from one extremity to another.

Gaola or Goala, contraction from Gopala, a cowherd (perhaps from Gala, milk). Gaola, the milkman race; they have considerable herds of cattle.

Gao-lobh, swearing while holding a cow's tail.

Gao-than, a village site.

Gao-ran, grazing ground.

Gao-lochan, gall stones extracted from the gall bladders of dead cows, much used in medicine, also in charms, and in painting.—*Gen. Med. Top.* p. 136; *Tr. of Hind.* ii. p. 40.

GAO. HIND. An ordeal. See Divination.

GAOHATTY, a town in Assam, the ancient Kasawati. See Gowhatty.

GAON, a Hindi word meaning a village, is applied to hamlets and townships in every part of India to which words of Hindi origin have reached. It is written in the English Gam, Ganw, and Gaum, as Mulligaum. It is a vernacular term from the Sanskrit Gram or Gramma, Grammu or Gramam, Gramamu, and still preserved and used in the word Grammadeva, the village deity, and used with inflections in Tamil, Malealam, Telugu,

and supposed to be represented in the Chinese Heong and Singhalese Gama.

Gaon-barah, in Bengal, a village authority.

Gaon-kari, a freeman of a village, either free from being of the original settlers, or having purchased it by fee, by some useful act, as digging a well, repairing a wall, building a temple.

Gaon Korawa, a section of the Korawa race. See Korawa.

Ga'oora, MAHR., a patel.

GAO ZABAN. PERS. Lit. cow's tongue. The plants of the bazars of India are the Cacalia Kleinia, Anisomeles Malabarica, Trichodesma Indicum, Heliotropium erosum, H. ophioglossa, Onosma bracteatum, O. macrocephala, and Macrotomia euchroma. Eastern physicians suppose them to have cooling properties, and give them in disorders arising from heat of body, external or internal.

GAR, TIBET, a fort; in Sanskrit, a district, a region, as Kash-gar, Gujar-gar, Cutchwaha-gar; and Ghar, HIND., is a house, a fortalice, a fortified town, as Futtehghar. Gharri, a fortalice. Nagar, also Nagara, SANSK., a town, a city, as Ahmadnaggur, Farrakhnaggur, or simply nagar, the town, is from the Sanskrit Nagara, and is often in English written Nagore.

GARA, an agricultural tribe in Saharunpur, Roorkee, Rampur, Sultanpur. They are Mahomedans, and are supposed to be converted slaves, like the Jhoja.

GARARIGA or Gadarya, from Gadūr, a sheep, a shepherd, and goat race, scattered over all the N.W. Provinces of India, but most numerous between Allahabad and Farrakhabad. They are in many clans, which do not intermarry,—Bakarkasan, Barkata, Bhararíya, Chak Bareya, Chikwa, Dhangar, Illahabadi, Jaunpuri, Namdahwalay, Nikhar, Paihwar, Pachhade, Tasselha. The Bhararíya take their name from Bhera, a sheep. The Chikwa are Mahomedans. The Dhangar, Jaunpuri, and Nikhar also weave coarse blankets. They marry the widow of a deceased brother. The Gareri, or shepherd tribe, are in dignity of caste in much the same position as the Gop. In the west of India they founded a dynasty, that of Holkar, which still flourishes. They tend sheep and make blankets from their wool,—a bad conjunction of trades, as the poor sheep are invariably shorn when blankets are in most request.—*Dalton, Ethnol. of Bengal*, p. 317.

GARBHA. SANSK. A dome of a Buddhist cave; also pregnant. Garbhadana, a Hindu rite performed on the first indications of pregnancy.

GARBHA. The nine days preceding the Dasara are the Nao-ratri, during which a Brahman is engaged to read the praises of Durga, and on the tenth performs the homa or fire sacrifice, in which rice and ghi are poured into the fire. Banya women keep up a dance called Garbha.

GARCE, in Telugu Garissa, a Madras grain measure of 400 paras = 9256½ lbs. The Madras olluk is a measure of 11·719 cubic inches. The Madras padi is a measure of 8 olluks, and the Tamil marakal measure is 8 padi.

GARCIAS AB HORTO, physician to the viceroy at Goa, author of a work entitled De Arom. et Simp. Historia, 1565.—*King.*

GARCIA SILVA FIQUERVA, in A.D. 1627, visited Persia on a diplomatic mission.

GARCINIA, a genus of the Garciniaceæ, the mangosteen tribe, a natural order of plants, consisting of trees or shrubs growing in Ceylon, the Peninsulas of India, the Khassya mountains, Sylhet, Burma, Andamans, Java, and the Moluccas. The species of this order all abound in a viscid, yellow, acrid, and purgative gum-resinous juice, resembling gamboge. This gum-resin is obtained by removing the bark, or by breaking the leaves or young shoots. It is met with in commerce as the fine or gum gamboge, cake or lump gamboge, and coarse gamboge. The Garciniaceæ genera are—Garcinia, Mammea, Mesua, Calophyllum, Kayea, Calyxaccion, Rheedia, Pentadesma, Moronobea, Micranthera, Quapoya, Clusia, Tavomita. Several of the Garcinia genus yield edible fruits, and one of them is the mangosteen fruit tree, G. mangostana, *L.*, a tree of the Malay Peninsula and islands of the Moluccas. G. Kydia, *Roxb.*, of the Andaman Islands, is a tree with a sharp but agreeably acid fruit, similar to the large fruit of G. pedunculata, *Roxb.*, which grows in Rungpur. G. paniculata, *Roxb.*, a tree of Sylhet, has a palatable fruit something like the mangosteen; G. Roxburghii, *Wight*, a tree of Travancore, Malabar, and Chittagong, has an edible but very acid fruit; G. purpurea, *Roxb.*, grows on the western coast of peninsular India. The fruits of several other species of the Garciniaceæ are brought to table in the countries where they grow, but they are regarded as very inferior. The mammee apple, or wild apricot of S. America, of another genus, is said to be very delicious. Its seeds are anthelmintic; its flowers yield on distillation a spirit known as Eau de Creole, and wine is obtained by fermenting its sap. Mr. Gamble enumerates 22 species of Garcinia.—*Roxb.*

Garcinia cambogia, *Desrous*, not *Roxb.*

Cambojia gutta, *L.*	G. Indica, *Choisy.*
G. Roxburghii, *Wight.*	G. papilla, *Wight.*
G. Kydia, *W. and A.?*	
Wontay, ... CAM.	Racta sbrava, . SANSK.
Valaiti amli, . . DUKH.	Goraka-gass, . . SINGH.
Kurka pulie, . MALEAL.	Karka-pulie maram? TAM.
Heela of NEILGHERRIES.	Woda chinta chettu? TEL.

A tall tree, growing in Ceylon up to 1500 feet, grows also in Travancore, in the forests of Malabar; is very abundant in Tenasserim, and very common in Siam and Cambodia. It is common in all the western forests of the Madras Presidency. A semi-transparent pigment exudes from the trunk, very adhesive, but quite unsuitable as a paint; the acid rinds of the ripe fruit are eaten, and in Ceylon are dried and eaten as a condiment with curries. It yields an excellent, straight-grained, lemon-coloured, slightly elastic wood, which is easily worked, and would answer for common furniture.—*Roxb.; Thwaites; Beddome.*

Garcinia cornea, *Linn.*, of E. Bengal and Burma, has a heavy brown-coloured wood, and yields a sort of gamboge.

Garcinia cowa, *Roxb.* ii. p. 622.

Toung-tha-lai, . . BURM.	Cowa, ... HIND.
Toung-da-lai, . . ,,	

This tree grows in Assam, Andamans, Bengal, Chittagong, and Burma. It is of a middle size, and handsome; it yields an inferior sort of gamboge, and the fruit, edible, though not the most palatable.

Garcinia dulcis, *Kurz*, a tree of the Andamans, with a close-grained hard wood.

Garcinia heterandra, *Wall.*, is the G. elliptica, *Wall. and Kurz*, and the Tha-nat-tau of the hills

of Burma up to 3000 feet. It yields a superior kind of gamboge.

Garcinia lanceæfolia, *Roxb.*, the G. purpurea, *Wall.*, and the Kirindur of Sylhet. Grows in Assam, Chittagong, and Sylhet.

Garcinia loniceroides, *T. And.*, is the G. succifolia, *Kurz*, of the swamp forests of Pegu. Yields a gamboge, but scanty and inferior.

Garcinia mangostana, *Linn.*, mangosteen.

Mungeestun of BOMBAY.	Manggusta, . . MALAY.
Men-gu, Young-zalai, BUR.	Manggosta, . . ,,
Manggisi, Bugis of . CEL.	Manggis Malay of Baloi
Shan-chuh kwo, . CHIN.	Java, ... SUNDA.
Manggos, . . LAMPONG.	Mangu, ... ,,

A prolific tree of the Malay Peninsula and the Archipelago, which yields the mangosteen, the most palatable of all known fruits. It is a very handsome tree, the foliage, which is large and opposite, being of the darkest shining green. The fruit is a drupe as large as a moderate apple; is composed of an outer skin of a soft and fibrous nature, brownish-red or dark purple on the outside, but when cut, of a bright crimson; the snow-white pulp which envelopes the seeds, lying within this, has an appearance no less beautiful to the eye, than the flavour is grateful to the palate. Its characteristic quality is extreme delicacy of flavour, without being rich or luscious. When cultivated, as in the peninsula of Malacca, it fruits twice a year, being ripe in July and December, yielding 1000 fruits; it grows in perfection as far as 14° N. of the equator, and 7° S. of it. A congenial proportion of heat and moisture throughout the year seems much more requisite than soil or latitude for the successful growth of this fruit. The coat or rind of the mangosteen fruit, and the bark of the katapping or wild almonds (Terminalia catappa), are used for dyeing black, also in dysentery. It has been introduced into Travancore. —*Crawfurd's Dict.; Low's Sarawak; Marsden's Sumatra*, p. 97; *Roxb.* ii. p. 618; *Voigt; Gamble.*

Garcinia morella, *Desrous.*

Cambogia gutta, *Linn.*	Garcinia gutta, *W. Ill.*
Hebradendron cambogioides, *Graham.*	G. elliptica, *Wall.*
	G. pictoria, *Roxb.*
Aradal, . . . S. CAN.	Gokatoo, . . . SINGH.
Punar pulit, . . . ,,	Kana-goraka, . . ,,

The Gum-resin.

Sanatosi, ... BURM.	Rewa-chini, . . . MAHR.
Gota gamba, . . HIND.	Makki, ... TAM.

A middling-sized tree of E. Bengal, Assam, Khassya, Ceylon, and S. India. In S. Canara, in the moist forests of the plains and ghats, up to 2000 feet elevation; Ceylon, up to 2000 feet elevation; also of E. Bengal and Assam. It is the true gamboge tree of commerce; and the pigment which exudes from wounds in the trunk is largely collected and exported from Ceylon and Siam; but little or no attention seems to be paid to it in British India. In the Madras Presidency, Colonel Beddome only met with the tree in S. Canara. It is closely allied to G. pictoria, which is the common species of the Madras Presidency, and scarcely distinguishable, except by the female flower.—*Beddome, F. S.* p. 86; *Gamble.*

Garcinia ovalifolia, *Hooker.*

Xanthochymus ovalifolius, *Roxb.*

Ella-gokatu, . . SINGH.	Kokati, ... TAM

A tree of the Western Ghats.

Garcinia paniculata, *Roxb.*, the Bubi-cowa of Sylhet, E. Himalaya, Khassya, and Chittagong.

Garcinia pedunculata, *Roxb.*, Tikal, HIND., Tikur, HIND. A tree of Rungpur, Goalpara, and Sylhet; its fruit weighs about 2 lbs. The fleshy part has a sharp, pleasant acid taste, and is used in curries sliced; they keep for years, and might be useful in long voyages. Wood used for planks.—*Roxb.* ii. 625.

Garcinia pictoria, *Roxb.* ii. p. 629. Hebradendron pictorium, *Christison.* It yields ossara-rewund, a gamboge at least equal to that of Siam or of Ceylon. This is a very common tree in all the western forests of the Peninsula, up to about 3500 feet elevation. It is closely allied to G. morella, but differs in the female flower. The pigment is excellent, and quite equal to that of G. morella. The timber is used by the natives for various purposes.—*Roxb.; Beddome.*

Garcinia purpurea, *Roxb.*, *Bedd.* G. Indica, *Choisy.* A tree of the Canara and Konkan Ghats. The fruit has an agreeable acid flavour, and it is preserved in syrup. The seeds furnish a concrete oil, known as the kokum.

Garcinia speciosa, *Wall.*, Pa-la-wa of the Burmese, grows in Tenasserim and the Andamans. It is an evergreen tree, with thin greyish-black bark. Its wood is said to be used by the Andamanese for their bows.

Garcinia stipulata, *T. And.*, the Sana-kadan of the Lepcha and Bhutan, up to 4000 feet. Its fruit is eaten. Its fruits and gum give a yellow gum, but it is not used.

Garcinia Travancorica, *Bedd.*, Malam pongu, TAM., of Tinnevelly. This is a very beautiful, middling-sized tree; flowers and fruits in August. The tree is confined to the southern portions of the Travancore and Tinnevelly ghat forests (3000 to 4500 feet elevation), but is most abundant in localities where it grows (Muti-kuli vayal, Travancore, Calcad Hills, Tinnevelly). Every portion of the tree yields abundance of a bright yellow gamboge, which has not yet been examined. It is a highly ornamental tree, and seed has been transmitted to the Ceylon and Bangalore Botanical Gardens.—*Beddome, Fl. Sylv.* part xv. p. 173.

Garcinia Wightii, *T. And.*, a tree of S. India. Its gamboge is very soluble, and yields a good pigment.

Garcinia xanthochymus, *Hook. f.*, X. pictorius.

Tepoi, ... ASSAM.	Iswara mamadi, . . TEL.
Ma tau, ... BURM.	Tamalamu; Chitaka, ,,
Dampel, . . . HIND.	Mraku, ... ,,
Maohla, . . PHEKIAL.	

This is the gourka tree; it yields a large quantity of indifferent gamboge.

GARDAN. HIND. The neck. Gardani, a silver neck ring, put loosely around the neck of Mahomedan girls in India, on which at each birthday a silver loop or ring is strung. See Baras-ganth; Ganth; Sal-girah.

GARD-DEZ. In Afghanistan, remains of pyrethræ or fire-altars are still to be seen on its hills, as also at Bamian, Seghan, and other places, showing that fire-worship had existed to a certain extent. See Kafir; Gab'r.

GARDENIA, a genus of plants of the order Cinchonaceæ and section Gardenieæ. The known species in the S.E. of Asia are about 23 in number. G. amœna, amsophylla, arborea, calyculata, carinata, Chinensis, coronaria, costata, densa, dumetorum, enneandra, florida, gummifera, latifolia, longispina, lucida, macrocarpa, rothemannia, mon-

tana, radicans, Thunbergia, turgida, uliginosa, obtusifolia, and sessiliflora. G. florida and G. radicans are known as Cape jasmine, their flowers are highly scented; colours pink, white, and pale yellow. G. campanulata is a shrub of Chittagong. Its berry is about the size of a golden pippin apple, and is employed as a cathartic and anthelmintic. One species of Gardenia (Telaga, TEL.) is a tree of the Godavery forests and Dekhan, and furnishes a very hard wood, which would be very good for turning. G. Fortuniana is a fragrant Chinese plant, now common in English gardens, to which it was introduced by the Horticultural Society in 1845. G. montana is common in the coast and inland jungles of Bombay, and may be recognised by its straight stem, long stout thorns, and general absence of leaves. The wood is hard, but always small, never squaring to more than 3 inches. G. obtusifolia, *Roxb.*, a timber tree of Pegu.—*Fortune's Tea Districts*, p. 17; *Dr. Gibson*; *Roxb.* i. p. 709.

GARDENIA CORONARIA. *Buch.*

G. costata, *Roxb.* | Yin-gat, Yen khat, BURM.

A tree of Chittagong, Moulmein, and Tennasserim. It produces a profusion of flowers that are white when they first open out in the morning, but on exposure to the sun become quite yellow. Wood used for building purposes. Is a strong, tough wood, and useful for turning. Fruit edible.—*Mason*; *Voigt*; *Cal. Cat. Ex.* 1862.

GARDENIA ENNEANDRA. *Roxb.*

G. latifolia, *Roxb.* | Bikki, ... TEL.

A small tree of peninsular India; furnishes a light wood of little use. Native combs are made of it.—*Voigt*; *Mr. Latham.*

GARDENIA FLORIDA. *Linn.*

Wax-flower Gardenia, ENG.	Shan-chi-tsze, . . CHIN
Gundhuraj, . . . BENG.	Gul-chand, . . . HIND.
Thet-ya, ... BURM.	Gundhuraja, . . SANSK.
Tngu-hsen-pan, . ,,	

Wax-flower Gardenia is a shrub of slow growth, cultivated in Japan, the Moluccas, China, and India. Both double and single varieties are common in gardens. Its pure snowy blossoms, strongly fragrant, smell like the narcissus, and contrast delightfully with the thick deep green foliage in which they are set.—*Roxb.* i. p. 703, *Gen. Med. Top.* p. 185; *Mason*; *Gamble.*

GARDENIA GUMMIFERA. *Linn.*

Gardenia arborea, *Roxb.*

Chiri bikki, . . . TEL. | Chatta matta, Garaga, TEL

A large shrub or small tree, with large fragrant flowers, which in the morning are white, and become yellow by the evening. The wood is hard. The natives eat the fruit. It grows in Ceylon, in the Gingi Hills, on the Godavery, and in the Circars, and is very common about Duddi, on the Gutpurba river; grows wild on the hills in the Kotah jungles, the leaves and unopened blossoms being shrouded at the point in pure fragrant gum-resin, said to be one of the sources of the Dikamully resin.—*Roxb.* i. p. 707; *Gen. Med. Top.* p. 185; *Voigt*; *Beddome.*

GARDENIA LATIFOLIA. *Aiton*, *Willd.*

Papara, ... HIND.	Karinguva, Kokkita, TEL.
Kumbay maram, . TAM.	Kurukiti, ... ,,
Bikki, Konda manga, TEL.	Pedda karinga, . . ,,

Grows wild in the moist Kotah jungles, and is also cultivated in gardens. It is a small tree in the south of the Peninsula of India, and also on the Godavery. Wood close-grained, and promises well for turning.—*Roxb.*; *Gen. Med. Top.* p. 185; *Beddome.*

GARDENIA LUCIDA. *Roxb.*, *W. and A.*

Gardenia resinifera, *Roth.*

Kun kham, . . ARAB.	Cumbi, ... TAM.
Tsay-tham by-ah, BURM.	China karinguva, . TEL.
Dikamalli, DUK., GUJ., HD.	Tella manga, . . . ,, .

Grows in the Southern Mahratta country, the Circars, on the Godavery, Chittagong, and Burma, and has a close-grained wood, well adapted for the lathe, like that of several other species of Gardenia and Randia; it is used for making combs. A cubic foot weighs 49 lbs. To the first branch is 15 feet, and girth at 6 feet from the ground is 3 feet. Its resin, Cumbi-pisin, TAM., has a strong disagreeable smelling gum-resin, procurable in most Indian bazars. It is much used, dissolved in spirits, as an external application, for cleaning foul ulcers, and in cases of worms in children.—*Roxb.* i. p. 707; *Voigt*; *Dr. Brandis*; *Beddome.*

GARDENIA RADICANS. *Var.* G. grandiflora, *Lour.* Cape jasmine.

Hwang-chi-tsze, . CHIN. | Muh-tan; Yueh-tan, CHIN.

This favourite shrub is largely cultivated in Ho-nan in China, also in Cochin-China, and in Indian gardens. Its flowers are excessively fragrant, and are said to be used in flavouring tea. It should be planted in a well-manured flowerbed or border which has been drained with sand; they require a soil more approaching to sand than clay, and plenty of water; propagated by cuttings in boxes or seed-pots during the rains.—*Riddell*; *Smith.*

GARDENIA RUBRA. Hung-chi-tsze, CHIN. Grows in Sze-chuen in China, and said to have brilliant red flowers. Its seeds are used to dye articles of an ochrous red colour.—*Smith.*

GARDENIA TURGIDA. *Roxb.* Nunjoonda maram, TAM. A tree of Bhutan, N. Canara, and Berar. Both it and G. montana are in Wight's Ic. ii. t. 577, 579; *Roxb.* i. p. 711; *Wight*; *Gibson.*

GARDENS and Gardeners.

Jardin, ... FR.	Giardino, ... IT.
Garten, ... GER	Huerta Jardin, . . . SP.
Bagh, Baghicha, . HIND.	Tota, . . . TAM., TEL.

Alike amongst Mahomedans and Hindus, the formation of a garden as a place of retreat is a great object of desire. In Wilson's specimens of the Hindu drama, which he translated from the Sanskrit, the Necklace and the Toy Cart contain beautiful allusions to gardens. 'The garden is now most lovely. The trees partake of the rapturous season, their new leaves glow like coral; their branches wave with animation in the wind, and their foliage resounds with the blithe murmurs of the bee. The bakula blossoms lie around its root like ruby wine; the champaka flowers blush with the ruddiness of youthful beauty; the bees give back in harmony the music of the anklets, ringing melodiously as the delicate feet are raised against the stem of the asoka tree.'

Toy Cart, Act 8, p. 125, says:

'Look round the garden with these stately trees,
Which daily, by the king's command, attended,
Put forth their fruits and flowers,
And clasped by twining creepers, they resemble
The manly husband, and the tender wife.'

And the Mahomedans in India also give them loving names, as Lal Bagh, Farkh Bagh, Roushan

Bagh, Ruby Garden, Garden of Delight, and Ornamental Garden. In this they resemble the Dutch.

Gardeners of British India are all Hindus, and constitute distinct castes. The largest number of them are the Malli, who give their name to the bulk of the gardening tribes. The Koeri gardeners of Hindustan in Behar grow the poppy. The Totakara of the Tamil people and the Teling Totavadu are good gardeners. The Malli are supposed by Mr. Campbell to be a considerable and widespread people. Between Ambala and Dehli are a good many Malli villages, and the race are scattered about the N.W. Provinces as gardeners. They are common about Ajmir, and on the southern frontier of Hindustan. South of Jubbulpur there are many, and are mixed with the Kurmi. All through the Mahratta country they are mixed with the Kunbi; and most of the potails are either Kunbi or Malli, and extending with the Kurmi far to the east, the Malli into Orissa, and the Kurmi into Manbhum and other districts of Chutia Nagpur.

The formation of a garden with Hindus assumes a religious character, and their Banotsarg ceremony consists in their marrying a newly-planted orchard to the neighbouring well, without which it would be held improper to partake of the fruit. The British have formed several agri-horticultural societies, each of which has its garden, with economic and ornamental plants. That best known is on the banks of the Hoogly, at Garden Reach, Calcutta, over which Dr. Wallich long presided. The Government garden, Saharunpur, was under the care of Drs. Royle and Jameson. The Madras Agri-Horticultural Garden in 1853 had 996 species of plants. There is one at Dapooli, near Poona. The Government Botanical and Horticultural Gardens at Ootacamund has a valuable collection of plants. The Mysore Government Garden at Bangalore, in the old Lal Bagh, was well known; and the garden at Peridenia, in Ceylon, under Mr. Thwaites' care, attained great perfection.

A botanical garden is kept up at Batavia in Java, at a considerable expense, defrayed by the Netherlands Government. The Indian Government gardens, as also those of the agri-horticultural societies, are for the object of encouraging the cultivation of useful and ornamental plants. European and native soldiers form kitchen gardens.—*The Necklace*, Act 1, p. 272; *Specimen of the Theatre of the Hindus, translated by Mr. Wilson; Chow-Chow*, p. 218; C. pp. 105, 106.

GARDHA-BHELA of Kakustha ruled in Balabhipura in S. 523; he is surmised to have been a son of Bahram Gour, one of whose sons, it is known, obtained dominion at Patan. All that is known of him is from a passage in an ancient Jain MS., which indicates that in S. 523, Raja Gardhabhela of Kakustha or Suryavansa, ruled in Balabhipura.

GARDOKH, Garo, Garoo, Gartop, Sur, Yoogar, or Gurtokh, is known by all these names. Rudokh is to the east by south of the Padgong lake, at about lat. 33° 25′ N., and long. 72° 40′ E., and Gardokh between the sources of the Indus and Sutlej, at about lat. 31° 40′ N., and long. 80° 25′ E. Through both these towns from Leh there is a route to Lhassa, the more direct one by Gardokh being 1350 miles in distance, or 4½ months' journey. By the route by Rudokh the Sok-po are said to have invaded Ladakh in 1826-27, and again 3000 Chang-pa in 1834, the latter rapidly retreating as the Kashmir troops approached. Shortly after both Rudokh and Gardokh fell under the dominion of Maharaja Gulab Singh; but disasters attending his army in 1842, the old boundary between Ladakh and Chinese Tibet was once more re-established. Another town, Shipki, is just without the Bassahir frontier, and 100 miles from the termination of the Hindustan and Tibet road at Serahun. From it there is communication with Simla, Rampur in Bassahir, and Kulu. The trade entering the Panjab from Gnari Khorsum is considerable. Shawl-wool comes from Chanthan in the vicinity of Rudokh, a tract of country long celebrated for the fine fleeces of its herds of sheep and goats. The people of the north are active traders. They proceed to Leh for charras and to Gardokh for shawl-wool, giving in exchange money, cloths, and spices. The mountain paths are scarcely practicable for laden mules, and merchandise is carried chiefly on the backs of sheep and goats. An annual fair is held in November at the capital of Rampur on the Sutlej. The town is of some importance, as the point where the commercial routes from Leh, Gardokh, and Simla meet, and also as a seat of the pashmina from Bassahir catches up the Hindustan and Tibet road at Serahun, and passes by Kotghur to Simla, and from Rampur direct by Spiti to Leh or to Sultanpur in Kulu, and thence to the Panjab. Garo is the most famous mart for wool in Chinese Tartary, and there is a fair of 10,000 or 22,000 people in July, well attended by merchants from Kamaon, Kanawar, and Ladakh, and sometimes from Yarkand. Wool, borax, and salt are the principal exports, and these articles are exchanged for the produce of the plains of India. The pass over the range between Garo and the Sutlej is 19,200 feet above the sea. It is near the source of the Indus river. The Garo river is the Sing-ge-chu or Indus, also called there Gar-jung-chu; and there is no great eastern branch, as some suppose. At Garo, according to Moorcroft, it is a very insignificant stream.—*Moorcroft's Travels; Capt. Gerard's Kunawar.*

GARG, a celebrated rishi, and founder of the Garga family, one of the 66 subdivisions of the Kanoujia Brahmans.—*Wils.*

GARGA, a Hindu religious sage, a follower of Kapila, who is mentioned in several Puranas. He was born at Mithila, and resided on the banks of the Gandak river. He taught that final emancipation would be obtained by ardent devotion in religious duties, whatever opinions might be held. —*Ward*, iv. p. 40.

GARGBANSI, a tribe of Rajputs in Sugri and Mahul of Azimgurh, and in Amorha, Ratanpur, Bansi, and Rasulpur, Ghous of Gorakhpur.—*Elliot.* See Chunumea.

GARGI VACHAKNAVI, with Sulabha Maitreyi and Vadava Pratitheyi, are three learned women, mentioned in the Grihya Sutras of the Rig Veda. —*Weber*, p. 56.

GARGYA, son of Baliki. He was a famous teacher and grammarian, and dealt especially with etymology.—*Dowson.*

GARH. HIND.

Gad, ... MAHR. | Gadi; Gadhi, . . KARN.

A fort, a house, a fortified village; the watch-tower in the centre of a village. See Gar.

GARHA, in the Jubbulpur district, once the capital of the Gond dynasty of Garha Mandla, whose ancient keep, known as the Madan Mahal, still crowns the low granite range along the foot of which the town is built. Tradition gives Garha a great antiquity, and it probably existed from the Christian era.

GARHA. HIND. Very coarse and thin cotton cloth.

GARHEEBUND, properly Garhiband, a description of maafee tenure in Bundelkhand, by which lands are held on paying a stipulated yearly tribute, but not one-fifth the amount which ought to be paid. The Mahrattas found the Garhiband holders difficult to deal with in every way, slow and irregular in the payment of revenue.—*Elliot, Supp. Gloss.*

GARHWAL, in the Himalaya, has a British portion and a Native State. British Garhwal, in the N.W. Provinces, lies between lat. 29° 26′ and 31° 5′ N., and between long. 78° 17′ 15″ and 80° 8′ E., with an estimated area of 5500 square miles; pop. (1872), 310,288 persons. The valleys of the Giri, Tons, and Pabar rivers, which flow into the Jumna, adjoin the district of Garhwal, in which are deodar forests, and some of kail, Pinus excelsa; while lower down there are forests of chill, Pinus longifolia. The Tons river is under the Garhwal and Dehra Doon authorities; the Pabar and the Giri run through Bassahir and Sirmur respectively. The streams are rapid, and the volume of water scanty. It has a mixed population.

The Dom or Dhum appear to be the descendants of the aboriginal tribes, and now form the menial class throughout the district. The Khasiya evidently came from the plains of Hindustan. The Brahmans and Rajputs arrived in the country after the establishment of a settled government. The great Hindu temples of Badrinath and Kedarnath attract large numbers of pilgrims, and have produced a deep influence on the history and manners of the people. They lie among the inmost recesses of the Snowy Range.

A totally distinct race inhabits the region lying within the Snowy Range. These are the Bhutia, a tribe of Indo-Chinese origin, much intermixed with Hindu elements. They talk the Hunia or Tibetan language, as well as the Hindi, and they have also a patois of their own. They number in all only 3030 souls, but they control the whole carrying trade with Tibet. Both men and women are powerfully built, dirty in their habits, and greatly addicted to drink. Among the social customs of Garhwal generally, must be noticed the universal prevalence of polygamy. Wives are looked upon in the light of beasts of burden, so that every man obtains as many as his means will afford. Desertion and suicide are common, in spite of all the efforts of the British officials in ameliorating the condition of women.

Garhwal or Tehri, the Native State, is in political relationship with the British Indian Government, lying between lat. 30° 2′ and 31° 20′ N., and between long. 77° 54′ and 79° 19′ E. The chief town is Tehri. The raja pays no tribute. The area of Garhwal is about 4180 miles; the population in 1875 was estimated at 150,000, and the revenue at £8000. The hills are generally very steep, and a large portion of the territory is covered with forests, which include valuable deodar tracts. These were leased to the British Government in 1864. Garhwal is to a large extent Bhot; the language spoken is Hindi. The habitable portion of the Bhot area in Kamaon and Garhwal is confined to the passes and their neighbourhood, all the rest being either snow or rock.—*Imp. Gaz.*

GARI. HIND. A carriage of any kind, from a coach-and-four to a wheel-barrow. The driver is called Gariwan, also pronounced Gadi and Gadiwan.

GARI-GOND. HIND. A light substance like the decayed cotyledons of a seed, or decayed soft grains of the pith of wood, very bitter to the taste. The native druggists of India call it a foreign white gum; it is a purge, and given when vision is much obstructed from any cause; one massee with other ingredients is a dose.—*Gen. Med. Top.* p. 136.

GARJO, a cross with the yak, when sire a bull and dam a yak. See Yaboo.

GARLAND.

Guirlande,	FR.	Ghirlanda,	IT.
Blumenkran,	GER.	Guirlanda,	SP.
Mala, Hara,	HIND.		

Garlands are in constant use in India amongst native Christians, Hindus, and Mahomedans, on festive, on religious, and on funeral occasions. They are placed around Hindu idols, over the graves of Mahomedans, at the doors of churches, and are hung around the necks of visitors. This seems to have obtained from the most ancient time, for garlands made part of the bridal as well as sacrificial ornaments amongst the Greeks. Thus in Agamemnon, Clytemnestra, in addressing Achilles, says:

> 'Offspring of Thetis, pity my distress';
> Succour a virgin named, tho' falsely named,
> Your bride: yet I with flowers adorned her brow,
> And fancied that I led her to your arms,
> But now I to the bloody altar lead.'
>
> *Iphigenia in Aulis.*

Acts xiv. 13 mentions how the priests of Jupiter brought oxen and garlands to offer sacrifice to Paul and Barnabas.—*Hind. Theat.* ii. p. 68.

GARLIC, Allium sativum.

Sum,	ARAB.	Aglio,	IT.
Kesun,	BALI.	Bawang-putih,	MALAY.
Beluli,	CAN.	Sir,	PERS.
Ail,	FR.	Sudulunu,	SINGH.
Knoblauch,	GER.	Ajo sativo,	SP.
Skorodon,	GR.	Vallai pandu,	TAM.
Shumim, Shum, Hebrew of Numbers xi. 12.		Vellulli,	TEL.
Lahsan,	HIND.	Sarimsak,	TURK.

Garlic is largely used as a condiment by all the Hindu and Mahomedan races of India, who consider it a valuable stimulant. It is added to their curries. It is grown all over India from the seed or bulbs, the latter method being most in practice. One of the bulbs is broken, and the cloves taken out and planted in beds about four inches apart. No particular care is required, save watering and keeping clear of weeds. When the leaves dry and wither, then take up the roots and preserve. Garlic oil is obtained by expression from the cloves of the garlic bulb. It is prescribed internally by native practitioners to prevent the recurrence of intermittent fevers, and externally in paralytic and rheumatic affections.—*Riddell; Faulkner; M. E. of* 1855.

GARM-AB, a hot spring in Jell, which preserves its temperature throughout the year.

GARM-MASALIH. HIND. Spices, warm condiments.

GARM-SAIR, PERS., is a term applied to the pasture grounds of the nomade pastoral races of Asia. Every pastoral mountain tribe in the Himalaya, in Tibet, in the Afghan and Baluch mountains, in Arabia, Syria, Persia, and in Kurdistan, has its wintering and summering regions. The province of Fars has its Garm-sair, also its Sarhad or Sard-sair, its warm and cold climates. The Kashgoi are a nomade Turkish tribe of about 12,000 families, whose chief is the Il-Khani of Fars. They and the Bakhtiari from the warm pastures of Arabistan and the head of the Persian Gulf, arrive in spring on the grazing of Isfahan. At the approach of winter, both the tribes return northwards to their respective wintering lands. The entire southern region of Fars, bordering on the Persian Gulf, is called the Garm-sair. It extends from the sea to the latitude of Kazeroon, and runs parallel with the Persian Gulf from the banks of the Tab to the confines of Luristan. From Bushire eastward as far as Cangoon, the tract is named the Dushtistan or land of plains. The Tungistan, commonly pronounced Tungistoon or narrow land, is a small tract of land east of Bushire. The greater portion of the people of the whole Garm-sair consists of an independent lawless set, many of the tribes being robbers by profession. A huge wall of mountains separates the Garm-sair or low region from the Sard-sair. Sard-sair signifies the cold region, but it is also termed the Sarhada, a word literally signifying boundary or frontier, but generally applied to any high land where the climate is cold, or the high table-land of Persia. One of the most conspicuous of these is an abrupt lofty hill, named Hormooj, where coal occurs. In Fars, the Garm-sair of Sijistan is a narrow strip of culturable land about one-fourth of a mile on the south bank of the Helmand, five days' journey N.W. from Nushki, on the edge of the desert. The Baluch races seem to pronounce it Gurmsehl or Garm-sail, and one of their wintering places is north-west of Nushki, distant about 75 miles.—*Pottinger's Tr.* p. 103; *Rich.*

GARNET.

Hung-sha,	CHIN.	Granati, Carbunculus,	LAT.
Grenat,	FR.	Yakut?	MALAY. ?
Granat-stein,	GER.	Sang-i-mahtab,	PERS. ?
Granaten,	,,	Granatnoi-kamen,	RUS.
Tambra,	HIND.	Granadas,	SP.
Granate,	IT.		

Garnet is a word supposed to be derived from the Grenatici specified by Marhodus, the red hyacinths of the Romans. There are many varieties, —Almandine or noble garnet; grossular garnet; cinnamon stone, essonite, hessonite, or kaneel stone; romanzonite, and hyacinth; common lime garnet; magnesia garnet; iron garnets; common iron garnet; rothoffite, alloclorite; melanite, pyreneite; colophonite; uwarorite; pyrope, almandine, hexahedral garnet; helvine or tetrahedral garnet; and idocrase or pyramidal garnet. The Alabandic carbuncles of Pliny were so called because they were cut and polished at Alabanda. The clear deep-red garnets make a rich stone, and are much used for ornament. They are cut quite thin on account of their deep colour. It is this thin stone which is now termed the carbuncle. Among the Burmese the most beautiful come from Sirian, the chief town of Pegu. Garnets of very good quality occur in Nellore, Masulipatam, and Bezwarrah. The red variety of the gem is very generally diffused over India. Its geognostic position is the hypogenic or metamorphic schists near their line of junction with plutonic rocks or trap dykes; for instance, in the crystalline and metalliferous areas of Salem and Nellore, whence the finest crystals are procured, and sold by the native merchants at an insignificant price. Colophonite is not uncommon in these tracts, as also in Mysore, the Neilgherries, the Karnatic, and other provinces of Southern India. It usually occurs in the granite, associated with the hypogene schists. Cinnamon stone or essonite was discovered by Dr. Benza in the Neilgherries in the hypogene hornblende rock, near the Seven Cairns Hill, where entire portions of the rock are formed almost exclusively of them, the essonite and hornblende in large separate crystals, embedded in a paste of compact felspar and hornblende; the former is very liable to disintegrate, leaving, in falling out, small cavities in the rock. Green garnet is of rare occurrence. Newbold discovered this in the Salem district at Sankerydrug, lat. 11° 29′ N., long. 77° 58′ E., associated with other green crystals in quartz veins, penetrating hornblende schist, associated with gneiss, garnet rock, actinolitic schist, and altered limestone, thrown into disorder by the intrusion of a porphyritic granite. A mine of precious garnet occurs at Gbarilpet, about 8 miles S. of Palunshah, in the Hyderabad country, in the detritus of a granitic rock, penetrated by trap dykes, and composed of mica, garnets, kyanite, quartz, and felspar. Dr. Voysey states that the precious garnets are found there at the depth of eight or ten feet in the alluvium at the foot of the rock. He found the surface of the rock and soil strewed with garnets in great profusion, but these were generally of a very coarse kind. The garnets when collected are gently pounded, and the bad ones broken; those which survive the blows are reckoned of good quality. In a river near the Munzerabad ghat in Mysore, the natives search for garnets, which are sold at one rupee each. They occur there as deposits from a hill of mica schist which occurs higher up the river, which Captain R. Roberts of the Engineers followed up.

The garnets of China are found in the Lu-shan mountain in Kiang-si, not far from Kia-king.

There are three distinct kinds of ruby garnets sold in Madras,—1. Subramaniam ravakalu, the best, obtained from a village of that name in the Madura district; 2. Badrachellum ravakalu, second in quality, obtained from Badrachellum on the river Godavery; 3. Kondapilly ravakalu, obtained in the neighbourhood of Kondapilly, Bezwara, Toley, Kistna district. Bezwara garnets sent to England realize in the market £8 a ton, and Mr. Bowden thinks they are used as a substitute for emery. In Southern India they are almost universally employed by the cutler, the stone-mason, and others, as a substitute for emery, under which name the coarser garnets are sold in the bazars. In the scale of hardness, the garnet is 6·5 to 7·5. Garnets are of various colours, a circumstance due to the varying proportions and combinations of the three or four silicates of alumina, lime, iron, and magnesia, of which they are composed.—*Madras Museum Report; King; MacCulloch's Comm. Dict.; Voysey; Newbold; Helfer; Mason; Smith; Eng. Cyc.; Mad. Ex. Jur. Report.*

GARODI, a race of migratory jugglers, who exhibit serpents; they profess Mahomedanism.

GARO HILLS are in the S.W. corner of the province of Assam, lying between lat. 25° 9′ and 26° 1′ N., and long. 89° 52′ and 91° 3′ E. The principal ranges are the Tura and Arbela Hills, which run east and west, some of the Tura peaks rising to 4500 feet. The Garo Hills form a mountainous projection between Goalpara and the Bengal district of Mymensing, and are now a revenue district of British India, with an area of 3180 square miles, and an estimated population of 80,000 or 100,000. Garo is a term applied to the people by the Hindus; but they consider themselves as forming three or four nationalities, with different names. The most eastern, bordering on the Khassya, are called the Nunya, the central tribe are the Lyntea, and the remainder are the Abengya. Each tribe has its dependent and independent branches. The Nunya resemble the Khassya in feature and complexion and in language. The language of the western Garo is unintelligible to the Nunya. The Bengali people, however, only distinguish the Garo as the Malawa and the Bemalawa, which, like the Bori and Abor of Upper Assam, means dependent and independent.

The Garo build large houses on the lower hills; the bamboo floor is from four to ten feet from the ground. One corner is enclosed as a bed-room for the parents and girls, who alone stop at home. Every village has its Deka-chang or bachelors' hall, in which all the boys and unmarried men sleep. Several of the petty rajas of Kamrup, whose estates skirt the Khassya and Garo Hills, are Hinduized Garo who have maintained their footings in the valley during changes of dynasty. The Garo have many slaves, called Nokol. A freeman, Nakoba, must not marry a slave girl, nor even keep her as a concubine. The men are lively, good-natured, hospitable, frank, and truthful. The young women make the first advances, the newly-married man is taken to the bride's home, and the descent of property is in the female line. The women wear a short kilt. The clans are divided into different houses, called Mahari (Buchanan calls these Chatsibak), which may be translated motherhoods. The man who marries the favourite daughter of the house must also marry her mother on the death of her father, and in this way he succeeds to the family property. Among them and the Khassya, in all domestic matters, the women enjoy a high social position. They never cut the hair of the head.

Cotton is their chief husbandry. They practise the jhumia mode of cultivation. Their weapons are swords, spears, bamboo shields. They use sharp bamboo panji or stakes, four inches long, as a means of opposing invasion. They eat omnivorously, kine beef, pork, deer, tigers, dogs, snakes, and frogs, but hold milk in aversion. They rear kine, goats, swine, dogs, cats, fowls, and ducks. They eat dried fish and tortoises, which they buy in the plains; and their hills supply them with deer, wild hogs, frogs, and snakes.

They believe in demons, imps, and witches; they think that the souls of certain persons can leave their human frames and take up their abode in the body of a tiger or other animal. A small dish of bell-metal with embossed figures, called a Deo-Kora, is hung up as a household god, and worshipped and sacrificed to; and the Garo believe that when the household are asleep, the Deo, or figure of the Kora, issues in search of food, and returns to its Kora to rest. They burn their dead, and bury the ashes near the door of the hut. At the time of cremation, dogs are sacrificed in order that they may direct the spirit on his way. They sacrificed human beings to their spirits, and to the manes of their chiefs, but in a treaty in 1848 they consented to abstain from hanging human skulls in their houses. A party of them, however, in May 1860, murdered sixteen natives of the plains in the north of the Maimansing district, and afterwards mutilated the bodies. They confessed the crime, and three were executed in their own villages before their own people. Their accomplices, in number some twenty men, were condemned to transportation for various periods. Their object was not so much plunder as human heads to offer to their spirit of the mountains. The raja of Nustung, one of the Khassya states, subsequently undertook to aid in repressing their raids.

The attempt to enumerate them at the census of 1871 disturbed them, and in 1872-73 an expedition had to put them down. The Garo erect carved posts as monuments. The Khassya and the Ho also erect monumental stones.—*Buch. Ham. in Linn. Tr.* xvii. p. 209; *Campbell's Ethnology; Dalton's Ethnology; Indian Antiquary*, October 1873; *Imp. Gaz.*

GAROREE, a wandering race in Woon.

GARORU of the Ravi, a rope across a stream, by means of which passengers and goods are slung across by a pulley arrangement.

GAR-PAGARRI, a sect of Hindu Sudras, who profess to have the power to prevent the fall of hailstones on fields. Possibly the term is derived from the Persian ghar, ice. Wilson says the word is Mahratta, and that they are retained in some villages as part of the establishment, to prevent the hail injuring the crops.

GARPHANS, officers of justice in Hundes.

GARRAH, a principality on the Nerbadda, bordering on Bundelkhand. In the early years of Akbar's reign (A.D. 1564, A.H. 972) it was invaded and conquered by Asof Khan, an officer of Akbar. It was governed by a queen, who opposed the Mahomedan general in an unsuccessful action, when, seeing her army routed and being herself wounded, she avoided falling into the hands of the enemy by stabbing herself with her dagger. Garrah mandla in the middle of the 16th century was 300 miles long and 100 broad. Garrah town is 5 miles below Jubbulpur.—*Elphin.* p. 439.

GARRAH, often written Gharra, a river of the Panjab; the modern name of the ancient Hyphasis.

GARRAH and Ubrassa, districts in the west of Cutch, in which are the towns of Mhar, Narua, and Lakpat Bandar.

GARRETT, JOHN, editor of a Classical Dictionary of India; also in 1847 of an edition of the Bhagvat Gita, in Sanskrit, Canarese, and English, with Schlegel's Latin version, and Humboldt's Essay on the Philosophy of the Gita.

GARRULACINÆ, a sub-family of birds of the tribe Insessores and family Corvidæ.

GARU. TEL. Literally 'they;' like the German Sie, the honorific plural of the pronoun, it is added to any name as a title of honour; thus Amma-garu, lady mother, is a titular appendix to the names of well-to-do Teling people.

GARUDA, a demigod of the Hindus, with the head and wings of a bird, and the body, legs, and arms of a man. He is the son of Kasyapa and Vinata, the brother of Aruna, and the vahan or vehicle of Vishnu,

'When high on eagle-plumes he rides.'

As Aruna, the charioteer of Surya (the sun), is the dawn, the harbinger of day, so does Garuda, the younger brother, follow as its perfect light. He is the emblem of strength and swiftness, and besides being the bearer of the omnipotent Vishnu, is greatly distinguished in Hindu legends on many very important occasions. Aruna, in the Sabean system of the Veda, as the charioteer of the sun, driving his six-horsed car, corresponds with the Aurora of the Greeks. The emblem or vahan of Vishnu is Garuda, or the eagle; and the Sun-god, both of the Egyptians and Hindus, is typified with this bird's head. It is the analogue of the eagle of Jove. Aruna (the dawn), in Hindu mythology, also the son of Kasyapa and Vinata, is the brother of Garuda, and is described as a handsome youth without thighs or legs. His two sons, Sumpati and Jutayoo, attempting in imitation of their father to reach the sun, the wings of the former were burnt, and he fell to the earth. Of this the Greeks may have made their fable of Icarus. The images of Garuda are set up and worshipped with those of Vishnu, in the temples dedicated to that deity. Sculptured images of him are also found in the magnificent cavern temples of Elephanta, Ellora, etc. In the last mentioned he is in several places accompanying Parvati, the consort of Siva. Garuda has many names. He is called Suparna from the beauty of his plumage; Nagantaka, or the enemy of serpents; Vishnu rat'ha, or the vahan of Vishnu, etc. In many of the vaishnava temples, Garuda is sculptured on the pillars, or large plaster figures are placed at each corner of the temple walls; also on the walls of many vaishnava temples as a winged young man, kneeling or seated, with the palms of the hands closed, and fingers pointing upwards, denoting reverence.—*Moor; Cole; Myth. Hind.* p. 374; *Tod's Travels; Taylor's Mackenzie MSS.*

GARUDA-BASIVI, a devoted Murli or Devadasa woman.

GARUGA PINNATA. *Roxb.*

Toom, ... BENG.	Karri-vembu maram, TAM.
Khyong-youk, . . BURM.	Garuga chettu, . . TEL.
Kuruk, Kanghur, . HIND.	Kalugudu, ... ,,
Khar pat, . . PANJAB.	

A large tree with a round umbrageous head; leaves pinnate, deciduous; flowers of a yellowish white, in panicles covered with a mealy kind of white substance; fruit size of a small plum, used for pickling. Grows in the Madras and Bengal Presidencies and Panjab; is common in the Bombay jungles and in the plains and on the hills of British Burma, but the wood is not much used. The bark is a tan; fruit is eaten raw and pickled. — *Riddell; Wight; Gibson; Brandis; Stewart; Beddome; Cal. Cat. Ex.* 1862.

GARUKI, a town in the Hormara district, a sterile province, subject to Las. The Gujar tribe occupy Jab-Malan. Garuki is occupied by the Sangur tribe; and at Hormara in Mekran, with 400 houses, is a tribe of this name. The Hormara tribe say they came originally from Sind.

GARWARA, a tribe of Monghir, who spear otters and the porpoise of the Ganges.

GAS-MADDOO. SINGH. A tree-snare. Atmaddoo, hand-snares.

GASPAR ISLAND, or Pulo Glossa, in lat. 2° 24½′ S., long. 107° 5½′ E., and 14 miles E. from Batavia; has on it a peaked hill, visible for 30 miles, and is a principal mark in sailing to or from the Gaspar Strait. Gaspar Strait, between the islands of Banca and Billiton, was named after a Spanish captain who passed through it from Manilla in 1724. Many navigators prefer this strait to that of Banca.—*Horsburgh.*

GASTEROPODA, the third class of molluscs; according to the system of Cuvier, it is very numerous, and an idea may be formed of it from the slugs and shell snails. According to other classifications it is the second class.

GASTEROSTEIDÆ, a family of fishes of the order Acanthopterygii. Gasterosteus ductor is the pilot fish.

GASTROCHÆNIDÆ, a family of molluscs, comprising the genera Gastrochæna, Chæna, Clavagella, and Aspergillum.

GASTRODIA SESAMOIDES. *R. Br.* A herbaceous species of orchis, native of New Holland. It is edible, and prefered by the aborigines to potatoes and other tuberous roots, and should be introduced into India. It flourishes in its wild state on loamy soil, in low or sloping grounds, and in the spring appears as a whitish bulb above the sward, of a hemispherical shape, and about the size of a small egg. The dusky white covering resembles a fine white net, and within it is a pellucid gelatinous substance. Again within this is a firm kernel, about as large as a Spanish nut, and from this a fine fibrous root descends into the soil. It is known in Van Diemen's Land and Australia by the name of native bread, also wild yam.—*Simmonds.*

GATA. HIND. (1) A plot or piece of land; (2) two bullocks in yoke treading out the grain; (3) a Brahman or Banya associating with a strange woman.

GATE. The gates of Eastern cities with Mahomedans have honourable names, such as the Dehli gate, the Mecca, etc., gates. In British India, natives lower their umbrellas when passing through the gates of a fortress. In China, the south gate is always honoured, and the dead and night soil are not permitted to be borne through it.

GAT'HA, a song, a verse; a religious verse, but not taken from the Vedas. The Zend hymns of the Zoroastrians (Zarathustra) are called Gathas. The verses interspersed in the Sanskrit Buddhist work called Lalita Vistara, are composed in a dialect between the Sanskrit and the Prakrit, and have given their name to this, the Gatha dialect.—*Dowson.*

GAT-HA, properly Gat'ha, a measure of length. The twentieth part of a jareeb. Each Gat-ha contains three Ilahi gaz. The word is derived from Gat-hna, to join or unite by knots, from Ganthi, a knot.—*Elliot, Supp. Gloss.*

GATTARU, an out-caste race in Ceylon.

GAU. SANSK. The German Gau, Armenian Gawar, earth, land, province. It was also a settlement of the Aryans near Sogdiana.

GAUDA. KARN. An agricultural tribe in Mysore, sometimes labourers; small farmers under a lease from the landholders. A grain store. TEL., a bricklayer race of Hindus.

GAUDA. KARN. The headman of a village, similar to the potail of the Mahratta villages; also

the headman of the potter, shepherd, cowherd, weaver, and cultivator castes.—*W.*

GAUDA-PALEN, a Buddhist temple at Paghan. Gauda-Palen signifies the throne of Gaudama. Height, 180 feet. It is cruciform in plan. It is very conspicuous in approaching Paghan from the southward, with numerous pinnacles and tall central spires; it is seen glistening with its white stucco-like plaster far down the Irawadi river, rising like a dim vision of Milan cathedral. It is compact in structure, and elevated in proportion to its bulk. It has a massive basement, with porches, and rising above in a pyramidal gradation of terraces, crowned by a spire Tee. From the top of the terrace, just below the spire, is a fine prospect of a vast field of ruined temples, stretching north-east and south-west.

GAUHATI (Gowhatty), chief town of Kamrup district, and the largest in Assam; situated on the left or south bank of the Brahmaputra, in lat. 26° 11′ N., and long. 91° 48′ E.; population (1872), 11,492. Gauhati is an important centre of river trade, being one of the largest seats of commerce in Assam.—*Imp. Gaz.*

GAULI, a milkman; tall, robust, and fair race of the Peninsula of India; have no resemblance to any other race in the Dekhan. The name is evidently from Gala, SANSK., GR., milk. They are pastoral and migratory. The name is also derived from Gopala. Gauliga a migratory pastoral tribe of Mysore, who rear buffaloes, sell milk and ghi, and accompany camps.—*Wilson.*

GAULTHERIA NUMMULARIA, and several other plants which extend into the N.W. Himalaya, are also found in the Javanese mountains nearly 3000 miles' distance. Gaultheria occurs along the whole Himalayan range and in the Khassya, and many other Java plants are more uniformly spread over the hilly districts of India and Ceylon. G. fragrantissima and G. trichophylla also occur in the Himalaya, but are represented by a few species in the plains of the Panjab, on the outer slopes of the Western Himalaya, and even on the Khassya mountains. Spiræa Kamtschatica, chamœdrifolia, and sorbifolia, and Paris polyphylla, are other Siberian forms which extend into the rainy Himalaya, and Corydalis Sibirica and Nymphæa pumila are remarkable instances of specific identity between Khassya and Siberian plants.—*Hooker.*

GAUNHARIN. HIND. From Gana, to sing. Singing and dancing women of Hindustan in the N.W. Provinces. They perform at all Hindu festivities, at households, play on the saringi (violin), and tablah (drum); their dancing is a posturing. They are like the bayadères of mediæval Europe, and are by profession immoral. They form a very numerous class in all towns and cities in India.

GAUPAYANA, sons or descendants of Gopa. They were the authors of four remarkable hymns in the Rig Veda, which have been translated by Max Müller.—*Jo. R. A. S.* ii. 1866.

GAUR, the bison of Bengal sportsmen. See Gavæus.

GAUR, a province north of Ghazni, which gave the Gori dynasty to India. It and Balkh are separated from the Seistan by the Paropamisan chain. See Gour.

GAUR, the ancient name of Central Bengal, and of its capital, the ruins of which are still so called. Gaur is mentioned in the Mahabharata, and in historical documents of the 9th century A.D. It was conquered in A.D. 1204 by the Mahomedans, who retained it as the chief seat of their power in Bengal for more than three centuries. It is in the Maldah district, situated on a deserted channel of the Ganges. The city with its suburbs covered an area variously estimated at from 20 to 30 square miles. The west side of the city was throughout washed by the main stream of the Ganges. Here is situated the large Sagar Dighi, the most celebrated artificial piece of water in Bengal. Gaur ruins have been a quarry, not only for the brick houses of the neighbouring towns and villages, but also for the mosques, palaces, public monuments, of Murshidabad. It is now entirely deserted, and overgrown with dense jungle, except where cultivation is again gradually spreading.—*Imp. Gaz.; Elphin.*

GAUR, a term applied by modern philologists to a class of languages relatives to Hindi. Dr. Caldwell, in his Comparative Grammar, remarks that by the term Gaura or Gauda are meant the Bhasha or Prakrit or vernacular tongues spoken in Northern India, some old ones of which have since ceased to be spoken, or have merged into others. At present the languages which may be considered Gaura, are Bengali, Hindi, with its neighbour the Hindustani, Panjabi, Gujerati, Mahrati, the languages of Kashmir and Nepal, altogether nine.

GAURA, a designation of one of the two great divisions of the Brahmans or the five Gauras, also to one of the five, the Brahmans of Bengal proper, who are distinguished again as Varendriya, Rarhiya, Satshati, and Vaidika Brahmans. The two first, from their being settled in the several portions of Gaura, called Varendra and Rarh; the third, as descended from 700 brahmanical families who were settled in Bengal before the introduction of the families from Kanouj, who are said to have been fugitives from Orissa; the fourth, from their knowledge of the Vedas. The Gaur Brahmans were also classed by Balal Sen, a raja of Bengal about the eleventh century, in three divisions, viz. Kulina, from Kula, a family, the most respectable members of the community; Srotriya, those who had passed through the established institutions, and had read part of the Vedas; and Vansaja, merely born Brahmans, possessing neither respectability nor learning.

There are other divisions of Bengal Brahmans of a still inferior description, degraded by acting as priests for the mixed castes, or by some peculiarities of a fanciful and fabulous character.

A Gaur Brahman is one of the five Gaurs now located in Hindustan, in the Upper Provinces, throughout the Subah of Dehli to the hills. There are many subdivisions of these Gaur Brahmans, who are apparently unknown in Bengal, as the Adh Gaur, Kaithal Gaur, Gujar Gaur, Sidh Gaur, and amounting in all to forty-two.

The Gaur Kayasth is one of the twelve divisions of the Kayastha tribe, who are generally clerks, who are all over India, many being in the Upper Provinces, where they settled under the patronage of Nasir-ud-Din, son of Balhav, about the 13th century.

Gaur Rajput, one of the 36 royal Rajput races, whose origin is doubtful; they are numerous in the N.W. Provinces, divided into three principal

branches,—the Bhat Gaur, the Brahman Gaur, and Chamar Gaur,—names derived, Mr. Elliot supposes, from some intercourse with Bhats, Brahmans, and Chamars.

Gaur-taga is an important tribe of Brahmanical descent in the north-west of India, extending through a great part of Rohilkhand, the Upper Doab, and territory of Dehli. They claim to have been originally invited from Bengal by Raja Janamejaya, king of Hastinapur, for the purpose of exterminating the Takshaka or Snake race, in concert with the raja. Mr. Elliot considers the Takshaka to have been Buddhist Scythians from the north, who invaded India. The Taga have their name, it is said, from the Sanskrit Tyaga, abandoning, as they abandoned their Brahmanical character, by accepting and cultivating the lands granted to them by Janamejaya.—*Wilson.*

GAURI, a name of Parvati, the consort of Siva. In Rajputana, under the name Gangauri, a festival is held in her name. Colonel Tod remarks that by the prefix of Ganga (the river) to Gauri, the Gangauri festival is evidently one essentially sacred to a river goddess, affording proof of the common origin of the rites of the Isis of Egypt and India; for Gauri is the goddess of abundance, and is called Isa, also Isani or Parvati, also Lakshmi, and corresponds to the Ceres of Greece. The festival relates to the Bassant or spring, the vernal equinox. An image is made of earth, barley is sown, and by watering and artificial heat is made to grow. In Rajputana beautiful girls carry the idol and bathe it in the water, and return with it to the palace. The festival resembles that of the Egyptian Diana at Bubastis, and of Isis at Busiris, within the Delta of the Nile. During this festival Iswara yields to his consort Gauri, and occupies an unimportant position near her at the water's edge, meanly clad, smoking intoxicating herbs, and holding the stalk of an onion in full blossom as a mace or club, a plant regarded by some of the Egyptians with veneration, but held by the Hindus generally in detestation; but why the Hindus should on such an occasion thus degrade Iswara, is not apparent. Gauri Sankar, in Hinduism, is the term usually given to the idol of Siva or Mahadeva and Parvati, in which she is sculptured sitting on Mahadeva's knees, with the bull Nandi at his feet, and the Sinha or lion at hers.—*Tod's Rajasthan*, i. p. 575.

GAURIKUND, in lat. 30° 36′ N., long. 79° 3′ E., in Garhwal, is on the right bank of the Mandagni, below Kedarnath. The heights above the sea are,—hot springs, 6417 feet; upper limit of walnut, 8116 feet; upper limit of chestnuts, 10,016 feet; upper limit of kanchua, 10,559 feet. —*Robert Schlagentweit.*

GAURI-SANKAR, a Hindu idol, in which the god Siva is represented in a sitting posture, with Parvati seated on his knee, the bull Nandi at his feet, and the Sinha or lion at hers.

GAURI SANKAR, the Nepalese name of a mountain in the Himalaya of Nepal, in lat. 27° 59′ 17″ N., and long. 86° 54′ 40″ E., attaining a height of 29,000 feet above the sea; it is also called Mount Everest, and in Tibetan, Chin-go-pa-ma-ri. It is on the Nepal and Tibet frontier, and is the highest mountain of our globe as yet measured. The Hindu name is from Gauri, white or fair, a name of Parvati, the wife of Siva; and Sankar or Sankara, one of the forms assumed by Siva. Gauri Sankar is the term in use among the Hindu pandits of Nepal; its signification shows a remarkable identity with the meaning of the name Chamalhari, the prominent object of western Bhutan. The name given to Gauri Sankar by the Tibetans, and that by which it is generally known in the northernmost parts of Nepal, is Chin-go-pa-ma-ri.

GAUR-THAKUR, a tribe of Rajputs settled in the Farrakhabad district.—*Wilson.*

GAURUA, an inferior class of Rajputs in Agra and Mathura, and other districts west of the Jamuna.—*Wilson.*

GAUTAM. HIND. A branch of the Chandravansi, or Lunar family of Rajputs, very numerous in the Lower Doab, and formerly very powerful. Offshoots from them, termed Gautamian, are settled in Azimgarh.—*Wilson.*

GAUTAMA or Gaudama is the name by which the last Buddha, Sakya Sinha, is known to the southern Buddhists. They believe that before coming as Gautama, he had passed through 550 different phases of existence, called dzat by the Burmese. The history of these 550 existences is detailed in the Jataka, in stories or tales supposed to have been related by Gautama himself to his disciples and others, to make them acquainted with what had happened to him during these metempsychoses. Almost all end by showing Gautama as the hero or principal personage, and that those who had befriended him were now around him as his disciples, whilst his former opponents were now the wicked Dewadat and heretics. Most statues represent him sitting cross-legged, the left hand upon the lap, and the other hanging over the right knee. It is the attitude of teaching. Other statues represent him recumbent on the right side, with the left leg placed directly over the right, the head resting on the palm of the right hand, supported by the elbow, and the left arm extended at length over the left leg. This is the position he is described to have assumed when he died.

Images of Buddha Gaudama are largely manufactured in Burma, in marble, wood, stone, and metals. At Amarapura is a sitting brass figure 12 feet high. It was formerly the tutelary saint of Arakan, and was carried off from thence A.D. 1784, by the king of Burma.—*Fytche*, ii. pp. 144–159.

GAUTAMA, also written Gaudama and Gotama, in the mythical legends of Hinduism, the father of Kripa; also one of the seven Rishi. Gautama, son of Gotama, is a name of the sage Saradwat; but many men have borne this name. One Gautama was the founder of the Nyaya school of philosophy, and Gautama Siddartha is a name of Gautama Buddha. See Buddha; Sakya.

GAVÆUS FRONTALIS. *Jerdon.*

Bos frontalis, *Lambert.*		B. gayeus, *Colebrooke.*	
J'hong-nua, .	ARAKAN.	Methana, . . .	KOCH'HI.
Gobay goru, . . .	BENG.	Mi-than, . . .	,,
Nuneo, ...	BURM.	Shial, ...	,,
Gavai, Gayal, . .	HIND.	Gau-jangli, . . .	PERS.

Found in the hilly tracts to the E. of the Brahmaputra, and at the head of the valley of Assam, the Mishmi Hills and their vicinity, probably extending north and east into China. It is a heavy, clumsy-looking animal; it has a small distinct dewlap. It is easily domesticated, and has bred with the common Indian cattle.—*Jerdon.*

GAVÆUS GAURUS. *Jerdon.* Bison.

Bos gaurus, *H. Smith.*	B. assel, *Horsf.*
B. gour, *Traill.*	Bibos cavifrons, *Hodgs.*
Vana-go, ... BENG.	Jangli-Khulga, . . HIND.
Pyoung, ... BURM.	Gaoiya, ... MAHR.
Kar-Kona, . . . CAN.	Ban-parra at . MUNDLA.
Peroo-maoo, . . . GOND.	Bod at SEONI.
Gour, Gauri-Gai, . HIND.	Katu Yeni, . . . TAM.

The gaur, called by sportsmen bison and jungle buffalo, is an inhabitant of all the large forests of British India, from near Cape Comorin to the foot of the Himalaya. It is abundant along the Syhadri range or Western Ghats, both in the forests at the foot of the hills, but more especially in the upland forests. The Animallay Hills, the Neilgherries, Wynad, Coorg, the Baba Booden Hills, and the Mahabaleshwar Hills, are all its favourite haunts. It dwells in the forests of the Tapti river and neighbourhood, and north of the Nerbadda, a few in the deeper recesses of the Vindhyan mountains. On the eastern side of the Peninsula it is found in the Pulney and Dindigul Hills, the Shanda Mangalam range, the Shevaroy Hills, and some of the hill ranges near Vellore and the borders of Mysore; from the Kistna and Godavery rivers all along the Eastern Ghats to near Cuttack and Midnapur, extending far into Central India, and northwards towards the edge of the great plateau which terminates south of the Gangetic valley,—Hodgson also says the Himalayan Terai. It extends into Burma and the Malay Peninsula, and formerly existed in Ceylon. It is a magnificent animal, in length 9½ to 10 feet, height at the shoulder 6 feet, tail 34 inches. They associate in herds of up to 30 or 40, generally 15 cows and a bull. It is one of the most timid and wary of animals, and requires to be stalked most warily and carefully. It breeds in the cold season, and the young are born June to October. When disturbed, the first who sees the intruder stamps with its foot, and the whole rush through the forest with a terrible crash. All attempts at domesticating them have failed.—*Jerdon*, pp. 302–6.

GAVÆUS SONDAICUS. *Jerd.*

Bos banteng, *Raffles.*	Bos sondaicus, *Müller.*
B. leucaprymnus, *Q. and G.*	
Tsoing, ... BURM.	Ban-teng, . . . MALAY.

The Burmese wild ox or wild cow is a native of the Malay Peninsula, Martaban, Java, Borneo, and Bali, but is not in Sumatra, Celebes, or any of the Philippine Islands.

Another wild ox, called Saladang by the Malay, seems to occur along with it.

GAVEH, a Persian standard. This famous standard was a blacksmith apron set in jewels, and was long the imperial standard of Persia. Gaveh was a blacksmith, who overthrew Zohak, and placed Yendoon on the throne of Persia. When collecting followers, he carried his apron as the standard of revolt against Zohak. This apron remained the standard of the empire, till taken by Saad-ben-Wakas, who commanded the Mahomedan army that conquered Persia.

GAVEL-KIND. ENG. The equal division of the inheritance amongst the sons. It was brought to England by the Jut brothers who settled in Kent. It was the custom of the Getic hordes, and is still followed by the Jharija Rajputs.

GAVIAL, the genus of crocodiles described as Gavialis, properly the gharial; has jaws very long, sub-cylindrical, slender, rather dilated, and convex at the end. Teeth, canines two, quite anterior, small; lower canines shutting into a notch in the edge of the upper jaw; feet fringed; toes webbed to the tip. The cervical plates united to and forming a disc with the dorsal ones. Males with a large swelling in front of the nostrils. See Crocodile; Gharial.

GAVYA. SANSK. Five products of the cow, milk and its preparations; in Hinduism, the pancha gavya are proper offerings to an ancestor's manes.

GAWILGARH HILL RANGE, a branch of the Satpura mountains in Berar, situated between lat. 21° 10′ and 21° 46′ 30″ N., and between long. 76° 40′ and 77° 53′ E.

Gawilgarh Hill Fortress is about 21 miles N.W. from Ellichpur, in lat. 21° 21′ 30″ N., and long. 77° 24′ 30″ E. It was taken by storm on the 15th December 1803. The Gawilgarh Hills rise in peaks to heights of 3000 feet. They are 120 miles long, and 60 miles broad. They commence at the confluence of the Purna and Tapti rivers, and, running nearly E. by N., terminate a short distance beyond the sources of the Tapti and Wardah, separating the Tapti and Purna rivers. To the south they are bounded by the valley of Berar, and to the north by the course of the Tapti. It was first fortified by the Gaoli, a tribe from whom it takes its name, and who are still numerous here. The fort, 2300 feet above the plain, and 3595 above the level of the sea, is quite in a dilapidated state, and the only interesting object now remaining is the old mosque, completely in ruins, many of its twenty-one domes having fallen in, and the surrounding walls given way. A tablet over the gateway records that this building alone cost within a few pice that of the whole fort. A gun on the fortress is 27 feet long. Colonel Stevenson in 1803 brought his guns up *via* Dhamungaon and Amjura, and his brigade of the army under the command of General Wellesley took Gawilgarh.

GAYA, a town in Bengal, in lat. 24° 48′ 44″ N., and long. 85° 3′ 16″ E., on the right bank of the river Phalga; it has a population of 66,843, and is the chief town of a British revenue district of the same name. It is in two portions, —the old town, or Gaya proper, where the priests reside, and Sahibganj, the trading quarter. As a place of Hindu pilgrimage, the town of Gaya is of comparatively modern interest.

Buddha or Bodh Gaya is about six miles south of Gaya; and a few hundred yards west of the Phalgu or Nilajan river there are ruins of great sanctity. Sakya Sinha, the founder of the Buddhist religion, dwelt here, and here is the pipal tree under which he sat in mental abstraction for five years. The tree is still here, but is much decayed, being at least 2400 years old. Immediately to the east of the tree there is a massive brick temple, nearly 50 feet square at base, and 160 feet in height. This is beyond all doubt the vihar that was seen by Hiwen Thsang in the 7th century, as he places it to the east of the Bodhi tree, and describes it as 20 paces square at base, and from 160 to 170 feet in height. At the present day the chief pilgrims to the sacred tree at Bodh Gaya are devout Mahrattas. Before leaving his home, he must first walk five times round his native village, calling upon the souls of his ancestors to accompany him on his journey. Of the 45 sacred places, Bedi tirat or tirtha is supposed to represent the footprint of

some deity. At each a pinda or ball of rice and water has to be deposited by the pilgrim, while a hymn is chanted by the attendant Brahman. The Brahmans number 65,301. One wealthy Brahman tribe are called Gayawal, and obtain large sums for conducting the pilgrims to the shrines. Gayalese widowers are barred the privilege of wiving after the death of their first wife, as Hindu widows are barred the privilege of taking a husband after the death of their first husband. This may be a remnant of the celibacy of the Buddhaic priests.

There are also extensive remains of temples and monuments, and of the Rajasthan or palace, said to be the residence of Dharma Asoka and some of his successors on the throne of Magadha. Another place of interest in the district is a temple of great antiquity, which crowns the highest peak of the Barabar Hills. This temple is sacred to Sidheswara, and contains a linga said to have been placed there by Bara Raja, the Asar king of Dinajpur. In September, a large fair, attended only by men, is held here. The pilgrims, who number between 10,000 and 20,000, spend a night on the mountain. Near the foot of the hill are some caves cut in the rock, about 200 years B.C., and in the immediate neighbourhood are a sacred spring and tank, and several sculptures of great interest to the antiquary. — *Cunningham, Ancient Geog. of India*, p. 459; *Tr. of Hind.* i. p. 223; *Imp. Gaz.*; *Arch. Surv. Report*, xxxii.; *Beng. As. Soc. Journ.* 1864.

GAYASHA, the tea-house girl of Japan. They are virtuous. It is part of their profession to assist at the orgies of the Pans and Nymphs. — *Hodgson's Nagasaki*, p. 240.

GAYATRI. From the Sanskrit Goi, to sing, an invocation used by Hindus as a prayer. That usually alluded to under this term is considered to be the most sacred verse in the Vedas. In the nature-worship of the Vedas, the sun was worshipped under the designation Savitri. This prayer is supposed to be known to Brahmans only. They are taught it when they receive the sacred string, and they are enjoined never to communicate it to any other sect. Its Sanskrit words are, — O'm! Bhūrbhuvā ssuvāhā, O'm! Tatsa vit'hru varēnnyām, B'hargo devāssyā dhimahi dhiyo yonaha pracho dayath. O'm! earth, air, heaven, O'm! 'Let us meditate on the supreme splendour of the divine Sun. May he illuminate our minds.' Professor Wilson's literal translation of it is: 'We meditate on that desirable light of the divine Savitri (the sun) who influences our holy rites.' Sir William Jones, Colebrooke, Wilson, and Benfey have each given interpretations of it, all somewhat differing. The Gayatri, called by Sir William Jones the mother of the Vedas, and in another place the holiest text of the Vedas, is expressed by the triliteral monosyllable AUM. Sir William Jones thus interprets it: 'Let us adore the supremacy of that divine Sun, the godhead who illumines all, delights all, from whom all proceed, to whom all must return, whom we invoke to direct our understandings aright in our progress towards his holy seat.' And in another place he defines that divine Sun as 'not the visible material sun, but that divine and incomparably greater light which illumines all, delights all, from whom all proceeds, to which all must return, and which can alone irradiate not our visual organs merely, but our souls and our intellects.' Mr. Colebrooke again thus explains it: 'On that effulgent power which is Brahm himself, and is called the light of the radiant sun, do I meditate, governed by the mysterious light which resides within me for the purpose of thought. I myself am an irradiated manifestation of the supreme Brahm.' These are, however, mere scholastic or theologic comments, to suit the theological doctrines of the various Hindu sects, for there is no doubt that the Vedic doctrine was a nature-worship, and the quoted Sanskrit words are an invocation to the sun. Gayatri is a form of metre, and thence applied to this verse in the Vedas, which is repeated inaudibly in the daily morning worship of the Brahmans. Bunsen thus interprets it:—

'We remember with longing the bright beams of Savitar:
May he prosper the handiwork of our piety!
For sustenance we supplicate the divine Producer:
That he may deign to bestow on us our portion, do we beseech him.
All who are wise of heart, adore God the Begetter,
Bringing him offerings of a devout heart, with hymns of praise.'

The extreme importance that the Hindus attach to the supposed profundity of the Gayatri, renders it a text of more curiosity than readers will be able to discover in the words themselves, in either their ordinary or recondite allusions. Sir W. Jones says that the Gayatri is called the 'mother of the Vedas.'

GAYAWAL, a class of Brahmans at Gaya, who claim the right of conducting the ceremonies of pilgrims at the Ghats, and of fees. — *W.*

GAYER. MALAY. A fruit of Singapore. Its seeds are used as marbles.

GAYNI or Gajni, an ancient name of Cambay, now in ruins, and 3 miles from the present city.

GAZ or Gazu, which is much used for making sweatmeats in Persia, is a glutinous substance like honey, deposited by a small green insect upon the leaves of the tamarisk tree. It is the manna of the chemist, Gazanjabin, and is the manna produced on branches of the Tamarix Indica, T. orientalis, by the punctures of the Coccus maniparus. This is often called Arabian manna, to distinguish it from Turanjabin, Persian manna, from the Shirkist or Khorasan manna, and from Sicilian manna.

GAZ. HIND. A long measure, formerly varying in length from 18 to 58 inches, but reduced by Akbar to a standard supposed of 33 inches, and called the Shahi-gaz. The gaz of Gujerat is 27¼ inches.

GAZA, a town in Syria, with a harbour and a castle. It contains many mosques. The principal commerce is furnished by the caravans between Egypt and Syria. Long. 34° 45′ E., lat. 31° 24′ N. — *Robinson's Tr.* i. p. 23; *Eothen.*

GAZELLE, the name given to several species of the family Bovidæ and sub-family Antilopinæ, under which they have been noticed, — the Indian, G. Bennettii; the Persian, G. sub-gutturosa; and Arabian, G. dorcas. The Indian gazelle is found in India, and is known to sportsmen as the goat-antelope, or ravine deer. The species to which no doubt Moore's celebrated lines were addressed, is the Dorcas gazelle of Arabia and Northern Africa, which is often kept in a semi-domestic state by the wandering Arabs, and makes a most

beautiful and sociable pet, though not unfrequently inclined to be mischievous.

GAZETTEER. Several of these relating to India have been published, — the East India Gazetteer, by Walter Hamilton; the Bengal and Agra Guide and Gazetteer; Thornton's Gazetteer of the Countries adjacent to India; Thornton's Gazetteer of the Territories under the Government of India, and of the Native States on the Continent of India; Pharoah's Gazetteer; and the Imperial Gazetteer, by Dr. W. W. Hunter, C.I.E., B.C.S., issued in 9 volumes in 1882.

GAZZA EQUULÆFORMIS. *Ruppell.* In the Straits of Malacca this species is very numerous at all seasons, and forms, like the rest, an article of food.

GEAWA. In the city of Lhassa, and over the whole of Tibet, Geawa Rembooehi, or the Grand Lama, is nominally the supreme authority in temporal and spiritual affairs. His residence is in Patala Goompa, on the north side of Lhassa.

GEBANTÆ, also known as the Catabeni, an ancient race who occupied the country immediately within the Straits of Bab-ul-Mandab. Their seaport was Okelis, which was long the centre of commerce between Europe and the East. Its ruins are situated about a mile inside the straits, at a place called by the natives Dakoon. See Okelis.

GEBBE, an island between N. Guinea and Gilolo, in the Eastern Archipelago, and not far from Gilolo. It is occupied by a Negro race, with nose flat, the lips thick and projecting, the complexion a dark olive, the eyes deep-seated, and, on an average, the facial angle 77°, but as high as 81°. In Gebbe and Waigyu, and in some parts of the coast of N. Guinea, the complexion is lighter, and the peculiar texture of the Negro hair is absent. M. Freycinet has described the Negroes of Gebbe. In Gebbe, Waigyu, and in some parts also of the coast of New Guinea, the Malayan race may have become intermixed with the Negro, as the complexion is lighter, and the peculiar texture of the Negro hair altered or obliterated. The language spoken at Waigyu is entirely Papuan, being that which is used on all the coasts of Mysol, Salvatty, the N.W. of Guinea, and the islands in the great Geelvink Bay. Waigyu, Gebbe, Poppa, Obi, Batchian, between New Guinea and the Moluccas, as well as the south and east peninsulas of Gilolo, possess no original tribes, but are inhabited by people who are evidently mongrels and wanderers.—*Wallace*, ii. p. 216.

GEB'L DUKHUN. Its porphyry quarries, the Mons Porphyritis of the Romans, are probably coeval with the celebrated Breccia quarries of Wadi Kcneh, and worked in the time of the first Osertasen, the supposed Pharaoh who ruled over Egypt in the time of Joseph. The beautifully coloured porphyries, green, purple, and red, and much of the basalt used in ancient Egyptian sculpture, were derived in great measure from Geb'l Dukhun and its vicinity. The Wadi from Geb'l Dukhun to Kench, the ancient Koinipolis, a little north of Coptos, is to this day called the Tarikat-el-Arabiyeh, the high road of the carts. An inscription on the frieze of the temple near Geb'l Dukhun, bears the name of the emperor Adrian, with the surname of Trajan, whose son by adoption he was. The temple is dedicated to Serapis the Great, with his titles of Pluto and the Sun, ΔΙΙ ΗΛΙΩΙΜΕΓΑ ΔΩΙΣ ΑΡΑΠ ΔΠ, and to the other gods in the same temple. Small temples to Serapis are very common in the vicinity of mines and quarries, as Pluto is supposed to preside over demons and the evil genii, who, the orientals imagine, watch over the treasures in the earth. Geb'l Dukhun lies in about lat. 27° 16′ N., and long. 33° E. There is an ancient road leading from it to Myos Hormus, an old port on the Red Sea, from which it is distant about 32 miles as the crow flies.—*The Eastern Desert of Egypt, by Hekekyan Bey.*

GECARCINUS, a genus of land-crabs, called by the French Tourlouroux, Crabes peints, and Crabes violets. G. carnifex and G. hirtipes occur in India, G. carnifex in the neighbourhood of Pondicherry; its carapace is very much elevated.

GECKO, a genus of saurian reptiles of the widely distributed natural family Geckotidæ. In the Malay tongue they are called Tokke or Tokai. In Parma, the ordinary call of the house Gecko is Tooktay. In the forests, large flat and marble-coloured Geckos cling to the smooth trunks of the trees. They are harmless, but their sudden clear call and their hideous forms alarm strangers. It is said a French traveller, M. Touquet, hearing his name pronounced, repeatedly answered to it, 'Eh bien,' until made aware that it was the Gecko's call. There are in Ceylon Hemidactylus maculatus, *Dum. et Bib.*, H. Leschenaultii, *Dum. et Bib.*, H. frenatus, *Schlegel.* The last named is very common in the houses of Colombo. Colour grey; sides with small granules, thumb short; chin-shields four; tail rounded, with a transverse series of small spines; femoral and frenal pores in a continuous line. The Geckos frequent the sitting rooms, and, being furnished with pads to each toe, they are enabled to ascend perpendicular walls, and adhere to glass and ceilings. The Tokai or Takke of the Malays, le Gecko de Siam of Cuvier, are numerous in Siam, but also occur in Java and other places of the Archipelago. One is from 6 to 9 inches long, and marked with red and green spots, and frequent tubercles. They destroy multitudes of noxious insects.

Gecko verus, *Merr.*, Bengal, Assam, **Andamans, Tenasserim.**
G. stentor, *Cantor*, Andamans, and six others.
Ptychozoon homalocephalum, *D. and B.*, **Pegu.**
Hemidactylus coctæi, *D. and B.*, **Calcutta.**
H. Kelaartii, Ceylon.
H. Leschenaultii, *D. and B.*, **Neilgherries.**
H. maculatus, *D. and B.*, Ceylon.
H. sublævis, *Gray*, Mergui, Ceylon.
H. fasciatus, *Gray*, Ceylon.
H. frenatus, Ceylon.
H. vittatus, Ceylon, and three others.
Peripia Cantoris, *D. and B.*, **Andamans.**
Nycteridium platyurus, *Schneid.*
Dorynra Berdmorei, *Blyth*, Mergui.
Phelsuma cepedianum, *Per.*, **Mauritius.**
P. Andamanensis, *Blyth*, Andamans.
Gymnodactylus Jerdonii, *Theob.*
G. Geckoides, *Spix.*, Salt Range.
G. triedrus, *Gunth.*, Ceylon.
G. pulchellus, *Gray*, Penang, **Singapore.**
G. frænatus, *Gunth.*, Ceylon.
G. Kandianus, *Kelaart*, Ceylon.
G. Mysorensis, *Jerdon*, Bangalore.
G. Indicus, *Gray*, Neilgherries.
G. Malabaricus, *Jerdon*, **Malacca.**
G. littoralis, *Jerdon*, Malacca.
G. Deccanensis, *Sykes*, **Dekhan.**
Nanotinus variegatus, *Blyth*, **Tenasserim.**
N. fascialatus, *Blyth*, Subathu.
Puellula rubida, *Blyth*, **Andamans.**

Eublepharis Hardwickii, Chaibassa, Chittagong, and Penang.
E. macularis, *Blyth*, Salt Range.
Homonota fasciata, *Blyth*, Central India.
Platyurus Schneiderianus, Java.
Boltalia sublævis, India.
Peropus mutilatus, Manilla.
Theconyx Seychellensis, Seychelles.
Pentadactylus Duvancellii, Calcutta, India.
Tarentola Borneensis, Borneo.
Goniodactylus Timorensis, India, Timor.
Cyrtodactylus marmoratus, Java, Philippines.
C. pulchellus, Singapore.
Heteronota Kendallii, Borneo.
—*Crawfurd's Embassy; Tennant's Ceylon*, p. 281; *Gosse's Natural History*, p. 31; *Gray, Lizards*, p. 155.

GEDAUN, in Baluchistan, the tent of black felt in which families reside. The Afghans call it Kizhdi; the Turks, Kara Ulli; and the Persians, Siah Chadr. The felt is the Namdah of India, from which is the Indo-European word Nomade

GEDROSIA of the Greeks, the modern Makran. See Kej.

GEER, a tract in the south of the Gujerat peninsula, stretching 50 miles east and west, and 30 miles north and south. It consists of ridges and hills covered with dense forest trees and jungles, and full of almost inaccessible fastnesses, which for ages gave shelter to robbers, outlaws, and the Aghori fanatics, said to be cannibals. Lions, till lately, were found in the Geer jungles, but there are no tigers. The climate is equable and temperate, and the coast is balmy with the wet breath of ocean breezes blowing fresh from the south pole. —*Cal. Rev.*, December 1860. See Kattyawar.

GEESOO. TIB. Koutouktow, MONG. Amongst the Mongols, the title of the highest class of the priests of Buddha. The one resident at Oorga is called by the Mongols Gheghen Koutouktow. The Oorga high priest seems also to be called Geesoo-tahba, and is a regenerated Buddha of great sanctity. There are 30,000 lamas under several heads at Oorga. See Geawa; Kouren; Koutouktow.

GEETA. SANSK. Properly Gita, from Goi, to sing a hymn or song. Bhagavat Gita, a divine song, a Sanskrit poem in the form of a dialogue between Arjuna and Krishna. That Geeta is a discourse on the Yoga philosophy. See Gita.

GEHAR, a large class of child-stealers in the valley of the Nerbadda.

GEHENNA, a valley celebrated for the inhuman and barbarous, as well as idolatrous, worship paid to Moloch, to which deity parents often sacrificed their offspring, by making them pass through the fire (2 Kings xxiii. 10, 2 Chron. xxviii. 3). To drown the lamentable shrieks of the children thus immolated, musical instruments (Hebrew, Toph) were played; whence the spot where the victims were burnt was called Tophet. After the captivity the Jews regarded this spot with abhorrence, on account of the abominations which had been practised there; and, following the example of Josiah, they threw into it every species of filth, as well as the carcases of animals and the dead bodies of malefactors, etc. To prevent the pestilence which such a mass would occasion if left to putrefy, constant fires were maintained in the valley, in order to consume the whole; hence the place received the appellation of Gehenna, the Jahannam of the Arabs. By an easy metaphor, the Jews, who could imagine no severer torment than that of fire, transferred this name to the infernal fire,—hell, to that part of the invisible world in which they supposed that the demons and the souls of wicked men were punished in eternal fire.—*Robinson's Travels*, i. p. 107.

GEHLOT, a Rajput race founded by Bappa. They long held power in Saurashtra. Before they became Saiva Hindus, they chiefly worshipped the sun. The name is also pronounced Grahlot. Arore, on the Indus, is said by the Gehlot to have been their ancient site, and they claim to be the Balicaputra who occupied it. They were driven from Balabhipura when it was taken and sacked by the Huns or Parthians. The Gehlot cula was subdivided into twenty-four sacha or ramifications, few of which exist,—the Aharya, at Dongurpur; the Mangulia, in the desert; the Sesodia, in Mewar; and the Piparra, in Marwar. Bappa, the Gehlot chief, born A.D. 713, obtained Chitore 728, and abandoned it 764. From the Gehlot have branched the Sesodia and Aharya. They are spread over different parts of the North-West Provinces. The name Sesodia is said to be from Sessoo, a hare. Their neighbours, who for some unexplained reason are fond of imputing cowardice to them, say their name of Gehlot is derived from Gehla, a slave girl. But the origin believed in Mewar is the following:—When the ancestors of the rana of Mewar were expelled from Gujerat, one of the queens, by name Pushpavati, found refuge among the Brahmans of the Mallia mountains. She was shortly afterwards delivered of a son, whom she called, from the cave (Goha) in which he was born, by the name of Gehlot; from him are descended the present ranas of Mewar or Udaipur. Their claim to be descended from Nushirwan and a Grecian princess, which has frequently been discussed, invests this clan with a peculiar interest.—*Elliot; Tod's Rajasthan*, i. p. 84. See Keneksen.

GEI-SHA, in Japan, dancing girls who also play and sing.

GELASIMI, land-crabs; most of these have a single large claw. They move about with that half erected, and quickly retreat to their holes in the sand. There are several species known,—G. annulipes, Indian seas; G. Dussumieri, G. tetragonum, of the Red Sea, Mauritius; G. forceps, *Edwards*, of Australia; G. cordifornis, *Edwards*, Australia.—*Collingwood.*

GELATINE.

Ghurri-ul-jallad, . ARAB.	Siris; Sirisht, HIND., PERS.
Yu-kiau, P'iau-kiau, CHIN.	Suresham-i-jald, ,,

Gelatine is obtained from skins, cartilage, tendon, membrane; also from the parings of hides or horns of any kind, the pelts obtained from furriers, the hoofs and ears of horses, oxen, calves, sheep, etc.; from the raspings and trimmings of ivory, the refuse pieces and shavings left by button-mould makers, and from other kinds of hard bone. Size, again, is made by boiling down in water the clippings of parchment, glove leather, fish-skin, and other kinds of skin and membrane, and is used either alone or mixed with flour, paste, gum-arabic or tragacanth, and employed by bookbinders, paperhangers, and painters in distemper. Gelatine is one of the principal constituents of most of the animal substances employed as food. The Chinese import various substances, which can be valuable only as yielding gelatine of different degrees of purity,—agar-agar, trepang, birds'-

nests, shark fins, and fish maws. Good isinglass is one of the purest forms of gelatine.

GELIDIUM CORNEUM, one of the Algæ. According to some narrators, it enters into the formation of the edible swallow-nests of the Japanese islands. See Algæ; Nostoe edulis.

GELONIUM LANCEOLATUM. *Willde.*
G. bifarium, *Willde.* | Hsai-than-bayah, BURM.

This pretty evergreen tree is found in the Rangoon district and Northern Circars; it seldom exceeds 3 feet in girth. Wood, white colour, fit for house-posts, and adapted for every purpose of house-building, weighs 50 lbs. per cubic foot. It is common in rather open forests, up to an elevation of 4000 feet. It is a very variable plant; and Mr. Thwaites thinks that all the specimens he had seen of the genus, from different and distant parts of India, might with safety be referred to one species.—*Roxb.* iii. p. 831; *Thw. Zeyl.* p. 274.

GELUM. TIBET. A monk.

GEM, a term employed by jewellers to designate the more beautiful of the precious stones. Gem sand, from the neighbourhood of Ava, is sometimes one of the Shan articles of merchandise. It consists of small fragments of nearly all the precious stones found in the country; but garnet, beryl, and spinel are its principal constituents, more especially the last, which seems to constitute more than three-fourths of the whole mass. A single handful will contain specimens of every shade,—black, blue, violet, scarlet, rose, orange, amber yellow, wine yellow, brown, and white. Many retain their original crystalline forms; some have the fundamental form of the species, a perfect octahedron; but many others have some of the secondary forms, among which it is not uncommon to see twin crystals re-entering angles, formed by two segments of the tetrahedron truncated on the angles, and joined together by their bases.—*Mason.*

GEMELLI-CARERI. Giovanni Francesco Gemelli-Careri, of Naples, wrote the Giro del Mondo, a narrative of his six years' travels round the world, and which was published in 1699. He notices that at his time the remnants of the conquests of the Portuguese in Asia were so inconsiderable, as scarcely to defray their own expenses.

GEMITORES, in natural history, an order of birds, comprising in India the families Treronidæ, Columbidæ, and Gouridæ. See Birds.

GENDARUSSA VULGARIS. *Nees.*
Justicia gendarussa, *Roxb.*

Jugut mudun,	BENG.	Nila nirganda,	SANSK.
Ba-wa-net,	BURM.	Cari nuchi,	TAM.
Tsin-kiau,	CHIN.	Nalla-vavali,	TEL.
Kali shumbali,	DUKH.	Gandharasamu,	,,
Vada kodi,	MALEAL.		

Grows in the Konkans, in Travancore, and Madura; is common in gardens. Flowers during the wet season, with dark purple or green smooth shoots. Grows in Liau-chau in Shan-si, and in Ho-nan. Its twisted, wrinkled brown roots are boiled in milk, and given in China in rheumatism, as a diaphoretic and diuretic.—*Smith; Voigt.*

GENII, spirits. The word is derived from the Arabic Jin, through the Persian. Mahomedans believe that the Jin reside in the lower or first firmament. See Jin; Saraswati.

GENNA, amongst the Naga, a kind of taboo.

GEN SHU SHAI. JAP. A festival on the annual opening of all public business.

GENTIANACEÆ, an order of plants, growing in most parts of the world,—in Japan, Arabia, and the E. Indies. The whole order is bitter as a characteristic, both in the stem and roots, and used as a tonic. G. umbellata grows in the Caucasus; G. decumbens, *L.*, is common at considerable elevations in the various parts of the Panjab Himalaya; a tincture of it has been used as a stomachic by the Lahoul missionaries. Gentian root is a bitter tonic, and before the discovery of cinchona it held the first place among febrifuge remedies, and it is still deemed a very useful medicine in intermittent diseases. A perfect substitute for the infusion of gentian is made from the Gentiana kurroo, common in the Himalaya, and is much used in native practice. Species of Agathotes, Exacum, Justicia, Cicendia, and Ophelia, of this and other orders, are possessed of the same properties as gentian. Gentiana asclepiadea, *Smith*, Lung-tan-ts'au, grows in Shen-si. Its roots are agreeably bitter.

GENTIANA KURROO. *Wall.*
Pneumonanthe kurroo, *Don, Royle.*

Kamal phul,	HIND.	Nilakil, Nilkanth,	HIND.
Himalayan gentian,	ENG.	Kurroo,	,,

Grows at Simla and other parts of the Himalaya, at from 3000 to 9000 feet. The roots are used like the gentian.—*O'Sh.* p. 459; *Cleghorn's P. Rep.* p. 658; *Stewart.*

GENTIANA TENELLA. *Fries.* The Tita of Ladakh and various parts of the Panjab Himalaya, up to 15,000 feet in Ladakh. In Lahoul, a decoction of the leaves and stems of this and other species is given in fevers. In Ladakh its root is put into spirits.—*Dr. J. L. Stewart.*

GENTIL, author of Voyages dans les Mers des Indes, 1660.

GENTILE, a term used by the Jews to designate all races not Jews or not circumcised. It answered to the Barbaros of the Greeks and Romans. The term was employed by the Europeans in India to designate the Teling people, the races occupying the country from Madras to Ganjam. It is pronounced Gentoo, and the people themselves accept that designation. The Gentile of the Jews was the equivalent of the M'hlecha of the Aryan Hindu, the E of the Chinese, and the Kafir of the Mahomedan. With the Arabs, they themselves are the Arab-ul-Arāb; all the rest of the world are Ajami, or foreign. Gentoo is a corruption of the Portuguese Gentio, a Gentile. Dr. Fryer (Travels, 1672 to 1681) says 'the Gentues, the Portugal idiom for Gentiles, are the aborigines.' He appears to be the first English writer by whom the term was used; but before his time, Pietro del la Valle speaks of the Hindus as Gentile, following the example of the Portuguese. Notwithstanding those unquestionable authorities, Halhed (Gentoo, Code xxi. xxii.) supposes that the Portuguese borrowed the term Gentoo from the Sanskrit word Gunt, a sentient being.—*Elliot.*

GEOCICHLA CYANOTUS, the Madras bulbul.

GEOGRAPHY of India, in ancient times, became slowly known to the learned men of the West. In the centuries immediately preceding the Christian era, the conquests of Alexander threw open the interior of Asia as far as the Indus and Afghanistan, and Greek colonies bearing the conqueror's name were established on the sites of Herat and Kandahar. Megasthenes, the

resident ambassador of Seleucus at the court of the Indian monarch Sandracottus, gave to the world a valuable store of information concerning India, of which only fragments remain to us in the works of Arrian and Strabo. But Megasthenes' knowledge of India was apparently limited to the valleys of the Indus and Ganges; he had little idea of its general configuration. The earliest geographical treatises were called Peripli, or circumnavigations, being in fact detailed descriptions of the coasts and ports of some particular sea or seas, and the nations bordering on them. Thus there were several Peripli of the Mediterranean, two or three of the Euxine and of the Red Sea, and one of the Indian Ocean. Eratosthenes the astronomer followed Megasthenes in his account of India. And if we compare his map with that of Herodotus, many improvements are apparent. But the great mountain chains of Asia are represented by a stiff, unbroken range, traversing that continent horizontally in one straight line. The Persian Gulf, the outline of India with its promontory, are strangely distorted towards the east, instead of pointing due south, Taprobane (Ceylon) making its appearance at the foot. In the generation after Eratosthenes, wrote Hipparchus, also an Alexandrine astronomer. He devoted much time to criticising Eratosthenes, and generally unjustly. From Hipparchus to Strabo there arose no geographer worthy of mention. The physicist Posidonius thought that the habitable world extends over about half the circumference of the globe, 'so that there would only be another half to be traversed by any one sailing with an east wind to India.' This, too, was the leading idea of Columbus' voyage 1600 years later, and was the germ of the name West Indies.

Pliny gives some details of the direct voyage to India, as it was practised in his day. His account is confirmed by the more than usually accurate Periplus of the Erythræan Sea (as the Indian Ocean was then called, the modern Red Sea being then the Arabian Gulf), the work apparently of a trader in those parts. The direct voyage to the western coast of India was a distinct advance upon the practice of the ancient Alexandrian traders, who seldom ventured far beyond the mouth of the Arabian Gulf. Hippalus, a pilot, discovered the secret of the trade winds; and, following his example, navigators sailed straight to Muziris (perhaps Mangalore). The district of Dachinabades is evidently the Dekhan, and Comar or Cape Cory is Cape Comorin.

Marinus of Tyre wrote 50 years after the date of the Periplus. He had new sources of information for the S. and S.E. of Asia. A miscalculation of the distance which would be covered by a seven months' journey, led him to place the capital of the Seres, or Chinese, about 3000 miles too far to the east. Such an error is the stranger, as the Chinese historians record the arrival at the court of the emperor Hi-wan-ti, in A.D. 166, of an embassy fron Antun (Antoninus), king of Ta-thsin (Rome). The Seres had been known even in the Augustan era as the silk manufacturing nation; but it was thought they carded the silk off the trees. Thus Virgil relates:—

'Velleraque ut foliis depectunt tenuia Seres?'

The error was long-lived. Pausanias had some glimmering of the truth; but the silk-worm was not known in Europe till Justinian. Just as Marinus extended Asia to the E., he extended it proportionately to the S.E. Rumours had already reached the author of the Periplus of the Erythræan Sea concerning Cochin China and the Malay Peninsula. On the strength of these and of other information of his own, Marinus conceived the continent as stretching far away in that direction, and then bending round and joining the S. of Africa. No doubt this tremendous extension of the length of the inhabited world by Marinus, accepted as it was by Ptolemy, by shortening the voyage across the Atlantic to India, was an additional incentive to the adventure of Columbus.

Claudius Ptolemæus, who may be said to be the last great ancient geographer, wrote about A.D. 150. He was a mathematician and astronomer, and regarded geography from a corresponding point of view. Ptolemy's information about the source of the Nile is more correct than Europeans possessed till Speke and Livingstone. It must have come to him *via* Zanzibar, down to which point the author of the Periplus of the Erythræan Sea has some acquaintance with the coast.

Ptolemy places Cape Comorin very little to the south of the mouth of the Indus. Massilia and Byzantium are still placed on the same parallel of latitude, and help to distort the whole map of Europe.

The northern provinces of British India occupy a great unbroken plain, which extends from the Himalaya mountains to the Arabian Sea and the Bay of Bengal, and is traversed by the rivers Indus and Ganges and their tributaries. The central and southern portion projects into the Indian Ocean. It is roughly triangular in shape, and its larger part consists of a hilly plateau or table-land. On the western flank of this plateau are the Aravalli Hills, which separate Rajputana from the plain of the Indus, and the Syhadri or Western Ghats, which rise abruptly from the sea to an elevation that seldom exceeds 4000 feet, though the Neilgherry mountains, near the southern end of the range, rise to 8760 feet. The eastern margin of the plateau is known as the Eastern Ghats. In Mysore the plateau rises to 3000 feet, but the average altitude of the central parts is about 1500 feet above the sea.

GEOLOGY of India has been summarized, during the 19th century, by Mr. James Calder, Captain Newbold of the Madras army, Surgeon Carter of the Bombay army; and lastly, and in the highest sense, in a joint work by Messrs. H. B. Medlicott, M.A., and W. T. Blanford, F.R.S. Its most striking feature is the difference between the rocks of the Peninsula proper and those of the countries lying beyond the great Indo-Gangetic alluvial plain. The investigations of Dr. Hugh Falconer have shown that, at a period geologically recent, the present Peninsula of India was a triangular island, bounded on each side by the E. and W. Ghats, converging to Cape Comorin, while the base of the triangle was formed by the Vindhya mountain range, from which an irregular spur, forming the Aravalli mountains, extended northwards; while between the northern shore of this island and a hilly country, which is now the Himalaya mountains, ran a narrow ocean strait. The bed of this strait became covered with debris from the adjacent Himalaya on its northern shore, and with this debris became entombed and pre-

served many and various animal remains. The present condition of the country in Northern India has been produced by a subsequent upheaval of the land, so that what was the ocean strait forms the northern plains of India, the long, nearly level valleys in which flow the Ganges and the Indus. Besides this, a great upheavement along the line of the Himalaya has elevated a narrow belt of the plains into the Siwalik Hills (determined to be of tertiary age), and added many thousand feet to the height of the Himalaya; and facts tend to the conclusion that India had one long term and one protracted fauna, which lived through a period corresponding to several terms of the tertiary periods of Europe.

The rocks of the Peninsula, though for the most part of very ancient date, are far less disturbed than those of the Himalaya, Afghanistan, and Burma, many of them, like the Vindhyan sandstones, being still quite horizontal. All the evidence goes to show that from a very early period in the history of the world, the greater part of the Indian Peninsula has been dry land; whereas for many ages the Himalayan area was occupied by the sea, and the rocks of that region have been, down to very recent times, and probably still are, subject to violent crushing and contortion. In fact, the arrangement of the strata shows that, notwithstanding the great outpourings of volcanic rock which constitute the Dekhan trap, the Indian Peninsula has from the earliest ages been one of the steadiest and most fixed portions of the earth's crust, whilst the Himalayan area has been subject to violent oscillations of level; and the highest mountains in the world probably owe their height to the circumstance that the elevating forces are still in operation.

The oldest rock known to occur in India is the *gneiss* of Bundelkhand. It is exposed over a roughly triangular area, lying between Kirwee, Gwalior, and the southern part of the Lalitpur district. Along its northern edge it is covered by the Gangetic alluvium, and on the other sides it is bounded by a steep scarp of Vindhyan sandstones, or by a series of sub-metamorphic rocks underlying the Vindhyan. Two other areas of gneiss occur in the Peninsula, but from their relations to the sub-metamorphic series, they are supposed to be of an age posterior to the gneiss of Bundelkhand. One of these extends, with hardly an interruption, from the Ganges in the neighbourhood of Bhagulpur, to Cape Comorin, and from the coasts of Madras and Orissa to Vingorla and Nemaur, where it is covered by the Dekhan trap. The other occupies the central and southern part of the Aravalli Hills in Rajputana, and it may be continuous with the eastern gneiss of the Nerbadda valley, underneath the trap. An outlier of the same kind of gneiss occurs in Assam. The gniess of Bundelkhand is of remarkably simple and uniform composition, while that of the south and east of the Peninsula is much more complex, and contains many extraneous minerals, among which may be mentioned the gold of the Wynad, and the immense deposits of magnetic iron ore that occur in many parts of the country. Resting upon the Bundelkhand gneiss, but more or less disturbed where in contact with the other gneiss of more recent age, is a series of partially metamorphosed strata of no great thickness, called the Bijawars, in Bundelkhand. This group of strata can be traced on the outskirts of the gneiss, from Silang in Assam to the Nerbadda valley. Similar rocks flank the Aravalli Hills; and detached outliers occur through Northern Rajputana and the S.W. Panjab, as far as the Korana Hills, beyond the Sutlej and Ravi, and within a few miles of the Panjab Salt Range. An upper series of transition rocks can be traced near Gwalior, and in parts of the Madras Presidency.

Over these, and resting unconformably upon them, comes the most widely distributed series of stratified rocks to be found in India,—the so-called *Vindhyan system*. This immense series of horizontal sandstones and shales extend from Sasseram and Rotasgarh on the Sone, to the borders of Mewar, and from Agra to the Nerbadda valley, with several outlying patches in Southern India, as at Bhima and Kurnool. All the diamonds found in India seem to be derived from a pebble bed at the bottom of the Vindhyan series, but the diamonds occur simply as water-worn pebbles, so that their original matrix is still unknown. That such an immense area of perfectly undisturbed and quite unaltered rock should be totally devoid of fossils, is very puzzling to the geologist, yet such appears to be the fact. The only explanations of it that can be given, are either that the Vindhyan rocks were deposited before the beginning of life on the globe, or that there was something inimical to life in the composition of the waters in which these rocks were formed. There is no evidence whatever, except the mere absence of life, that either of these explanations is correct; but, on the whole, it seems most probable that the Vindhyan strata were deposited in fresh water, at a time when the dry land and the waters enclosed by it were without life, although some kinds of living beings may have existed in the contemporaneous seas.

Resting in hollows of the ancient gneiss or the Vindhyan rocks, are found the first fossiliferous strata of the Indian Peninsula, — those of the *Gondwana system*, or the Indian coal measures. These rocks extend in patches from West Bengal through South Rewa and the Nerbadda valley to Cutch, and they are also found in the valley of the Godavery, and as far south as Madras. A small outlier of the same series has been discovered at the base of the Himalaya, near Darjiling, almost the only instance of a Peninsular rock occurring in the extra-Peninsular area.

At the bottom of these rocks, wherever the base can be seen, is found a peculiar conglomerate, consisting of boulders, many of them of large size, embedded in a fine matrix. Some of these boulders are marked with parallel strie on one or more sides, and the appearance of the whole stratum is that of an ancient boulder-clay deposited from icebergs. Similar rocks are observed in S. Africa and in the Permian formation of Europe, and it is probable that these Talchir beds are of Permian age. Above the Talchirs lie the coal-bearing strata of Karharbari, and the Damuda series of coal-bearing beds found here and there over the country from Raniganj to the valleys of the Nerbadda and Wardha rivers. These are no doubt economically the most important of the Indian strata, though they cover a very small area compared with that occupied by the Vindhyan rocks or the ancient gneiss.

The coal-bearing strata contain numerous plant

remains, and a few skeletons of terrestrial animals belonging to the amphibia, but not a trace of any marine fossil has yet been discovered in them. There has been a good deal of discussion about the age of these beds, and of those overlying them, the Panchets, Jubbulpur bed, and Mahadevas, because the fossil ferns they contain resemble on the one hand those of the Trias of Europe, and on the other they are very like those found in the true carboniferous rocks of Australia. The lower rocks of the coal-bearing series are supposed by Mr. Blanford to be of Permian or carboniferous age, and the upper ones (Panchet) Triassic. There can be no doubt about the proper geological horizon of the uppermost plant-bearing beds,—those of Cutch and Rajmahal,—which are distinctly Jurassic in their fossils, and contain in Cutch marine animal remains, such as ammonites of Jurassic age, interstratified with the plant beds. Of the *Cretaceous rock*, only a few detached areas exist in the Indian Peninsula, and these are all, with the exception of some beds at Bagh near Indore, within a few miles of the present coast.

Overlying the cretaceous rocks of Bagh, and overlaid in turn by the Eocene beds of Gujerat, are the great horizontal sheets of the Dekhan trap,—the greatest accumulation of volcanic rock known in the world. The trap extends in the north and south direction from Belgaum to Nemuch, and spreads from Kattyawar on the west, to Amarakantak on the east, covering every kind of rock, from the Bundelkhand gneiss to the most recent cretaceous formations, with its great horizontal lava flows, and in parts of the Western Ghats it is more than 4000 feet thick. It has been surmised that the lava must have been ejected on dry land, and not under water, because in some parts, as near Naldrug, the upper part of nearly every flow is full of vesicle, now occupied by zeolites and other minerals. How this could have been accomplished so as to leave all the beds nearly horizontal, and without trace of a single volcanic cone, is not apparent. But Dr. John Grant Malcolmson, who in the early part of the 19th century described this great volcanic outburst, discovered in the Gawilgarh trap many casts of marine shells.

The following is a classified list of formations in Peninsular India, with the approximate maximum thickness in feet :—

Cænozoic.	Recent and Post-Tertiary.		Blown sand, soils, including black soil or regur, ...	Unknown; 700 feet deepest boring.
			Modern alluvial deposits of rivers, estuaries, and the sea-coast, Khadar of Indo-Gangetic plain, etc., ...	
			Raised shell beds of coast, ...	
			Low-level laterite; older alluvial deposits of Ganges, Nerbadda, Godavery, etc.; cave deposits, ...	
	Tertiary.		Miliolite of Kattyawar; Pliocene, Miocene, and Eocene (nummulitic) beds of Cutch and Gujerat; sandstones, clays, and lignites of the west coast, Travancore, and Ratnagiri; Cuddalore sandstones; high-level laterite, ...	2,700
Mesozoic.	Dekhan Trap Series.		Upper traps and inter-trappeans of Bombay; middle traps; lower traps and inter-trappeans of Central India, Rajamahendri, etc.; Lameta or infra-trappean group; infra-trappeans of Rajamahendry group, ...	6,000
	Marine Cretaceous Rocks.		Arialur, Trichinopoly and Utatur groups, ...	3,000
			Bagh beds, ...	
			Neocomian of Cutch, ...	
	Marine Jurassic Rocks.		Umia, Katrol, Chari, and Pachham groups of Cutch; Jeysulmir limestones; Triputty and Ragavapuram beds of east coast, ...	6,000
Palæozoic?	Gondwana system.	Upper	Cutch and Jubbulpur, ...	11,000
			Rajmahal and Mahadeva, ...	
		Lower	Panchet, ...	13,000
			Damuda: Raniganj or Kamthi, ironstone shales and Barakar, . .	
			Karharbari and Talchir, ...	
Azoic.	Vindhyan Series.	Upper	Bhanrer (Bundair), ...	12,000
			Rewa, ...	
			Kaimur (Kymore), ...	
		Lower	Kurnool, Bhima, Sone, Semri, ...	2,000 ?
	Transition or Sub-Metamorphic Rocks.	Upper	Gwalior, Cuddapah, and Kaladgi series, ...	20,000
		Lower	Bijawars; Champanir beds; Arvali; Malani beds; transition rocks of Behar and Shillong (the last extra-Peninsular), ...	...
	Metamorphic or Gneissic.		Gneiss, granitoid, and schistose rocks, etc., ...	?

The following is the succession of the more important fossiliferous peninsular rocks :—

		Peninsular Rocks.	*Supposed Marine Equivalents.* Indian.	European.
Cænozoic.		High-level laterite, . .	Nummulitic,	Middle Eocene.
		Upper Dekhan traps, . .	?	Lower Eocene.
Mesozoic.	Dekhan Traps.	Middle traps, . . .	Arialur,	Upper chalk.
		Lower traps, . . .	Trichinopoly,	Lower chalk.
		Infra-trappeans or Lameta,	Bagh beds, Utatur,	Upper greensand.
	Gondwana.	Jubbulpur and Cutch, .	Umia and Katrol,	Jurassic.
		Mahadeva and Rajmahal, .	Chari and Pach'ham,	
		Panchet, ...		Triassic.
Palæozoic.		Damuda, ...		
		Talchir, ...		Upper Palæozoic. ?

Classified List of Formations in Extra-Peninsular Territories of British India.

Recent and Post-Tertiary.—Alluvial and lake deposits; sub-Himalayan high-level gravels.

Pliocene.—Upper Manchars of Sind; upper and middle Siwaliks of sub-Himalayas, Panjab, etc.; Mammaliferous deposits of Western Tibet; Dehing group of Assam; fossil-wood deposits of Pegu.

Miocene.—Lower Manchars and Gaj of Sind; Murree beds (in part); Nahan; Tipam group of Assam; Pegu group of Burma.

Eocene.	*Upper*	—Nari group of Sind; Kasauli and Dagshai groups of sub-Himalayas.
	Middle	—Nummulitic limestone of Sind, Panjab, Assam, Burma, etc.; Khirthar of Sind; Subathu of sub-Himalayas; Indus or Shingo beds of Western Tibet; coal measures of Assam?
	Lower	—Ranikot beds of Sind; lower nummulites of Salt Range.
Cretaceous.	*Upper*	—Dekhan trap; Cardita Beaumonti beds and cretaceous sandstones of Sind; olive group of Panjab Salt Range; Disang group of Assam; upper cretaceous of Khassya Hills; Negrais beds of Burma (*N.B.* Some of these formations may in part be Eocene).
	Middle	—Hippuritic limestone of Sind; cretaceous beds of Mount Sirban in Hazara, and of Kohat; Chikkim beds of N.W. Himalayas; cretaceous beds of Assam in part; Mai-i group of Burma?
	Lower	or Neocomian beds in Chichali beds, Salt Range.
Jurassic.	*Upper*	—Salt Range; Gieumal and Spiti beds of Northern Panjab and N.W. Himalayas.
	Middle	—Variegated group of Salt Range; part of Spiti shales in N.W. Himalayas.
	Lower or Lias	—Upper Tagling limestone of N.W. Himalayas; Sylhet trap.
Trias.	*Upper, including Rhætic*	—Lower Tagling limestone of N.W. Himalayas; Nerinæa beds of Mount Sirban, Hazara; Para limestone of N.W. Himalaya; beds with Megalodon and Dicerocardium at Mount Sirban, Hazara.
	Middle	—Salt Range? Lilang series of N.W. Himalayas, and Kashmir. Axial group of Burma.
	Lower	—Ceratite beds of Salt Range; infra-Triassic of Hazara in part?

Permian and Carboniferous.—Salt Range carboniferous limestone; Damudas of Sikkim and Bhutan? infra-Triassic of Hazara; Krol limestone of Pir Panjal? Krol limestone and infra-Krol of Western Himalayas; Kuling series of N.W. Himalayas and Kashmir; Moulmein group of Burma.

Silurian.—Obolus beds of Salt Range; Attock slates of Upper Panjab? slates and traps of Pir Panjal and Kashmir? Muth and Bhabeh series of N.W. Himalayas; Blaini and infra-Blaini of Simla area?

Infra-Silurian.—Salt marl of Salt Range? gneiss of Pir Panjal and Ladakh; upper gneiss of Zanskar range; Shillong series of Assam Hills, Mergui group?

Lower or Central Gneiss of Himalayas; Gneiss of Assam and Burma.

—*Geol. Manual*, I. xiii.

GEOMYDA, a genus of the Cataphracta, or shielded reptiles, the order Chelonia and family Geomydidæ. G. Bealii, grandis, mutica, nigricans, Reevesii, spinosa, spengleri, and tricarinata, occur in S.E. Asia. See Reptiles.

GEOPHILUS FULGENS, a luminous centipede.

GEOPHILUS NICOBARICUS is the Columba Nicobarica of Latham, the C. Gallus of Wagler. It inhabits the isles of Nicobar, Java, Sumatra, and many of the Moluccas.

GEORGE ibn BACTISHUA, a native of Khorasan, a physician celebrated for his skill in medicine and for his proficiency in the Persian language. He was educated at the medical school at Nesabur or Jondisabur. He was sent to serve under the Khalif-ul-Mansur, and at whose request he translated several books on medicine. His son Gabriel was physician to Harun-ur-Rashid.

GEORGIA, a Russian province extending from lat. 39° to 44° N., and long. 37½° to 50° E., consisting, with the exception of Daghistan, of all Russian territory S. of the Caucasus. It is 417 miles long, 280 miles broad, and with an area of 56,007 square miles; population above a million. Its divisions are Abasia, Baku, Daghistan, Erivan, Guria, Immeritia, Kakhetia, Karabagh, Kartelinia, Kuba, Mingrelia, Lesgistan, and Shervan. The rivers are the Aras and Kur, with tributaries. Georgia is called by the Persians Gurgistan, and by the Turks Gurtsbi. The last reigning king ceded it to Russia on his death, which happened in 1800, and in 1802 it was made a Russian government. The hills of Georgia are covered with forests of oak, ash, beech, chestnut, walnut, and elm, encircled with vines, growing perfectly wild, but producing vast quantities of grapes. Cotton, rice, wheat, millet, hemp, and flax, are raised on the plains. The valleys afford the finest pasturage, the mountains abound in minerals, and the climate is healthy. Georgian women have fine dark large eyes, very regular features, and a pleasing mild expression of countenance. The dress of the higher ranks is splendid, and carefully adjusted. The Georgian dance consists of feats of activity, and strange and inelegant contortions of the limbs, sitting down on their heels, and hopping about in that position.—*Porter's Travels*, i. p. 123.

GERANIACEÆ, the geranium tribe, largely cultivated as flowering plants. They are propagated by cuttings, which ought to be kept somewhat dry till they root. The root of G. Nipalense, *Sut.*, is called Rowil and Bhand; it grows in the Himalayas, and is said to be astringent, and useful in diseases of the kidneys.—*Powell; Voigt.*

GERARD, two brothers, one a medical, the other a military, officer in the Bengal army, who distinguished themselves by their researches into the physical geography of the Himalaya. Dr. Gerard wrote an account of Kanawar. He accompanied Lieut. (afterwards Sir Alexander) Burnes for a great part of the road, in his travels in Central Asia. Captain Alexander Gerard of the Bengal Engineers was employed in surveying the Himalayas, which he ascended to the height of 19,600 feet. He was afterwards employed in Central India. His Account of Kanawur, edited by George Lloyd, appeared in London in 1841.

GERARDINIA LESCHENAULTIANA. *Dcne.* A tree in the central province of Ceylon, at 5000 to 6000 feet.—*Thw.*

GERARDINIA ZEYLANICA. *Dcne.*

Urtica heterophylla, *Roxb.* | Gass-kahambillya, SINGH.

Not uncommon in the warmer parts of Ceylon. —*Thw. Zeyl.* p. 259.

GERBILLUS INDICUS. *Hlyth.* Jerboa rat.

G. Hardwickii, *Gray.* | G. Cuvieri, *Waterhouse.*

Jhenku Indur, . . BENG. | Yeri yelka of WADDARS.
Billa ilei, ... CAN. | Tel yelka of . . YENADI.
Hurna Mus, . . . HIND.

The India jerboa rat of all India and Ceylon is of the family Muridæ. The jerboa are field rats of Asia and Africa, with small fore limbs and well-developed hinder limbs, with slender form and large eyes. The colour is always of uniform bright fawn. The incisors are always of a deep yellow colour, the eyes very large and full, the tail longer than the body. A large adult male measured,—length of body, 7 inches; of tail, 8⅛; of head, 2⅛; of ear, ⅛; of fore foot, ⅛; of hind foot, 2. Weight, 6¼ oz. They are said to be very prolific, bringing forth 16 to 20 at a birth, but this seems an exaggeration, and the litter probably seldom exceeds 12. It is the common prey of foxes, owls, snakes. Lives in numerous societies, making

extensive burrows in the red gravelly soil of the Mulnaad, generally in or near the root of shrubs or bushes. The entrances, which are numerous, are small, from which the passage descends with a rapid slope for two or three feet, then runs along horizontally, and sends off branches in different directions. These galleries generally terminate in chambers from half a foot to a foot in width, containing a bed of dried grass. Sometimes one chamber communicates with another, furnished in like manner, whilst others appear to be deserted, and the entrances closed with clay. The centre chamber in one burrow that was opened was very large, which the Waddars attributed to its being the common apartment, and said that the females occupy the smaller ones with their young. They do not hoard their food, but issue from their burrows in the evening, and run and hop about, sitting on their hind legs to look round, making astonishing leaps, and on the slightest alarm flying into their holes. The Waddars eat this species. Another species, G. erythrourus, *Jerdon*, inhabits the Indian desert west of the Jumna, Hurriàna, and adjacent districts.—*Jerdon.*

GERMAN, a race in central and northern Europe, who form, with the Irish, English, Scotch, Persians, Aryan Hindus, Greeks, and Romans, part of the great Iranian family. Philologists admit a Germanic family of languages.

GERMANES, a sect of ascetics mentioned by Megasthenes, supposed to have been Buddhists. See Sarmanes.

GERRA or Gerrha was in ancient times a great emporium in the Persian Gulf. Its ruins are to be seen at the inmost recess of the deep and narrow bay, at the mouth of which are the islands of Bahrein.

GERU. HIND. Red earth, ochre. The earths and clays met with in the Panjab bazars are,—

Geru, a hard, red, laminated earth, sometimes used in dyeing; school teachers grind it up with water, and teach to write with it on wooden slates. It is used medicinally in India.

Gil-i-khardya is a variety of Geru.

Gil-i-abrorshi or Gil-i-farsi is a pink clay, hard, but less brittle and paler than Gil-i-irmani.

Gil-i-makhtum, a variegated earth, deep red and pure white, soft and irregular; it contains clay, carbonate of lime, and sesquioxide of iron.

Gil-i-irmani differs little from Geru and Geri. It is a rough, red, brittle earth, occurring in laminated masses, used as a colour, and also medicinally. It is the representative of the Bolus Armeniacus, once so celebrated as a European medicine.

GETÆ, an ancient race, supposed by Professor Wilson to be the Sacæ. Dr. Jamieson proves satisfactorily that the Getæ, Scythians, and Thracians were the same people, and that it is very probable, if not certain, that the Getæ and Goths were the same people. On the northern side of the Danube, opposite to the territory occupied by the Scythians, and in the angle forming a part of Thrace, there was a small nation in the time of Herodotus, who bore the name of Getæ. The Massagetæ and Getæ seem gradually to have advanced from their ancient limits into the more fertile districts of Asia. And all the lower and middle parts of the western boundary of the Indus went by the name of Indo-Scythia. The Scythians, chiefly the Getæ, had expelled the Greeks, and re-peopled it with colonies of their own nation. The Getæ were the bravest and most just of all the Scythians, and continued to preserve this character in their new possessions. Gete, Jut, Jit, and Takshak races, which occupy places amongst the 36 royal races of India, are all from the region of Sakatai or Chaghtai. Regarding their earliest migrations the Puranas furnish certain points of information, and of their invasions in more modern times the histories of Mahmud of Ghazni and of Timur abundantly acquaint us. If we examine the political limits of the great Getic nation in the time of Cyrus, six centuries before Christ, we find them little circumscribed in power on the rise of Timur, though twenty centuries had elapsed. At this period (A.D. 1330), under Timur, the last prince of Getic race, the kingdom of Chaghtai was bounded on the west by the Dhasht-i-Kapchak, and on the south by the Jaxartes or Jihun, on which river the Getic khan had his capital. Khojend, Tashkand, Ootrar, Cyropolis, and the most northern of the Alexandria cities, were within the bounds of Chaghtai. From the mountains of Joud to the shores of Makran, and along the Ganges, the Jit is now widely spread. The Takshak or Takiuk may probably be discovered in the Tajak, still in his ancient haunts, the Transoxiana and Chorasmia of classic authors; the Mawar-ul-Nahr of the Persians; the Turan, Turkistan, or Tocharisthan of native geography, the abode of the Tachari, Takshak, or Toorshka invaders of India, described in the Puranas and existing inscriptions. The Getes had long maintained their independence when Tomyris defended their liberty against Cyrus. Driven in successive wars across the Sutlej, they long preserved their ancient habits as desultory cavaliers, under the Jit leader of Lahore, in pastoral communities in Bikanir, the Indian desert, and elsewhere, though they have lost sight of their early history. The transition from pastoral to agricultural pursuits is but short, and the descendant of the nomadic Gete of Transoxiana is now the best husbandman on the plains of Hindustan, but during the rebellion and mutiny of 1857 they marched boldly under British leaders to aid in restoring order. Asi was the term applied to the Gete, Yeut, or Jut, when they invaded Scandinavia and founded Jutland.—*Tod's Rajasthan; Pennant's Hindoostan; Chatfield's Hindustan; Recherches sur les Langues Tartares; Kennedy on the Origin of Languages.*

GHADA or Ghur-Kudd. ARAB. A thorny bush. Its succulent leaves are the favourite fodder of the camel of Arabia. It grows 4 or 5 feet high, has a reddish stem and green fleshy leaves.—*Lady Anne Blunt.*

GHADI. MAHR. A Sudra attendant on a village temple.

GHADIR. ARAB. A fanatical practice of Shiah Mahomedans of India on the 18th of Zilhaja, when three images of dough, filled with honey, are made to represent Abubakr, Umar, and Usman, which are stuck with knives, and the honey is sipped, as typical of the blood of these khalifs, whom they regard usurpers. The festival is named from Ghadir, a pool,—Mahomed, it is said, having declared Ali his successor at a place called Ghadir-Khum, a watering-place for caravans half between Mecca and Medina.—*Wilson.*

GHADSI or Garsi. MAHR. Vagrant musicians, said to be descendants of the race who formerly

inhabited the great southern forest, the Dandakaranya. They are village pipers and drummers. —*W.*

GHAFFAH or Guffa, the burying alive of a Sunyasi.

GHAGGAR, a river in the Panjab and Rajputana. It rises among the Himalayan slopes in the native state of Nahan or Sirmur (lat. 30° 41′ N., long. 77° 14′ E.). In ancient times the lower portion of the river appears to have borne the name of its confluent, the Saraswati or Sarsuti, which joins the main stream in Patiala territory. At present, however, every village through which the stream passes has diverted a portion of its waters for irrigation.—*Imp. Gaz.*

GHAGRA. HIND. A petticoat of Meo women; a skirt worn by women from Malwa, Gujerat, Kattyawar, and Cutch, also by Purbhu girls in Bombay, fastened by a band round the waist, and reaching the ankles. The ghagra and choli are comparatively modern innovations, adopted by Hindu and Jain women from the Mahomedans. In the south of India and in Burma, it is the popular belief that women were made to bare their breasts to allure the male population; but it is a fact that till the conquest of India by the Mahomedans, made-up apparel was unknown. Rajput ladies have only three articles of parure,—the ghagra or petticoat, the kanchi or corset, and do-pati or scarf. The fashion varies in each province and tribe, though the texture and materials are everywhere the same,—cotton in summer, and quilted chintz or broadcloth in winter.—*Tod's Rajasthan.*

GHAIAS-ud-DIN-bin-HUMAM-ud-DIN is known by his takhallus or literary name, Khondamir. His book is entitled Habib-us-sayar-fi afrad-ul-bashar, the curious part of the lives of illustrious men. It is a history which he had extracted from that which his father Mirkhond had composed and entitled Rauzat-us-Safa, but to which he made augmentations. He dedicated this book to the secretary of state belonging to the king of Persia, Shah Ismail Safavi, who gave him the name of Habib-Ullah; and for that reason the book had the name of Habib given it in the year A.D. 1508, Hijira 927, in the reign of Louis XII. He was also author of another book, entitled Khulasat-ul-Akhbar, or The Cream of Histories, which he completed about A.H. 900. Khondamir's last work was the Humayun Namah, which he finished A.H. 940. He was born at Herat about A.H. 880 (A.D. 1475), and died A.H. 941 (A.D. 1534-35). At his death his title was Amir-i-Akhbar, Prince of News.—*History of Genghiz Khan*, p. 422; *Elliot, H. of India.*

GHAIR. ARAB. Without.

Ghair Mulazim, as opposed to Mulazim, persons in the villages of the Panjab who help the farmers, but are not regularly hired cultivators.

Ghair-Mahdi, a Mahomedan sect who believe that the imam Mahdi has come to the world and gone. The words mean, without, or deprived of, Mahdi. See Elias; Mahomedan.

GHAKKAR, a Scythic race inhabiting the banks of the Indus. The Ghakkar was a warlike tribe in the time of Mahmud of Ghazni, inhabiting the Salt Range or Johd mountains, between the Indus and the Behut (Hydaspes). The Moghul, and subsequently the Daurani, failed to master them, but the Sikh rulers, after having been frequently foiled, at length nominally accomplished their subjugation by stirring up internal faction, and by the perpetration of acts of cruelty and treachery (Rec. Govt. of India). The Ghakkar opposed Mahmud; in 1205 they ravaged the Panjab to the gates of Lahore; in 1206 they stabbed the Mahomedan sultan in his tent. They were converted to Mahomedanism, and in 1525 submitted to Baber, in return for a grant of country. During the next two centuries they rendered great services to the Moghul dynasty against the Afghan usurpers, and rose to high influence in the Panjab. They were driven from the plains by the Sikhs in 1765 A.D., but they maintained their independence on the Murree Hills till 1830, when they were crushed after a bloody struggle. In 1849, Rawal Pindi, with the rest of the Panjab, fell to the British, but the Ghakkar revolted four years afterwards, and threatened Murree as late as 1857. They now number only 10,153 souls, described as a fine spirited race, gentlemen in ancestry, and bearing and clinging under all reverses to the traditions of noble blood.

At an early period of history they were given to infanticide. It was a custom, says Ferishta, 'as soon as a female child was born, to carry her to the market-place, and there proclaim aloud, holding the child in one hand, and a knife in the other, that any one wanting a wife might have her, otherwise she was immolated.' By this means they had more men than women, which occasioned the custom of several husbands to one wife. When any one husband visited her, she set up a mark at the door, which, being observed by the others, they withdrew till the signal was removed. They continued polyandric till Baber's time. The Ghakkar are supposed to be the descendants of the mountaineers whose chief Arsakes sent ambassadors with presents to Alexander. Baber writes the name Guker, but it is also written Ghuka and Khaka.—*Tod's Rajasthan*, i. p. 636; *Imp. Gaz.* iv. p. 278.

GHAMETA, a subdivision of the Kurmi tribe.

GHANA or Ghani. MAHR. A heap of grain which the mistress of a house places on a mortar, to be given to a Brahman at the Makara Sankranti, or the sun's entrance into Capricorn.—*W.*

GHANCHIO in Gujerat, matmakers.

GHANTA. HIND. A clock, a gong, an hour. Ghanta bajana, to strike the hour.

GHANTARAVAMU. SANSK. Crotalaria, *sp.* This, like the Telugu name Gilaka chettu, is a generic term signifying 'rattle,' from the sound of the seeds in the dry legume.

GHAO. HIND. A wound, an ulcer; hence Ghaeja(?), GUJ., the village barber and barber-surgeon.

GHAR. PERS. White quartz, white carnelian; ice, hail; also, ARAB., a cave.

GHAR. MONGOL. The hand. It is the Sanskrit Kar, the Hindi Gar, and Greek Kheir.

GHAR-BASATH is the revisiting, by a newly-married Hindu woman, of her parents' house. If she do not return within eight days, she cannot do so till after a year.

GHARI, a water clock, a clepsydra, a brass gong; a division of time, about twenty-four minutes. Gharial, a watch; hence Ghariali, a gong-striker.

GHARI. MAHR. Ghadi. A Sudra attendant on a temple, corresponding with a Gurare.

GHARIAL is the Gavialis Gangeticus, the narrow-beaked crocodile of the Ganges, supposed to be the largest of the living saurians. The measurement of the largest mentioned by Messrs. Dumeril and Bibron is given at 5 metres 40 centimetres (17 feet 8 inches). See Reptilia.

GHARILPIT, about 8 miles S. of Palunshah, in the Hyderabad country. Garnets occur here in the detritus of a granitic rock, penetrated by trap dykes, and composed of mica, garnets, kyanite, quartz, and felspar. Dr. Voysey states that the precious garnets are found at the depth of eight or ten feet in the alluvium at the foot of the rock.

GHARRA. HIND. An unglazed earthen water-pot; hence Ghar-nai, a raft supported on pots.

GHARRA RIVER, the modern Panjabi name applied to the united streams of the Beas and Sutlej, from their confluence at Endrisa to their junction with the Chenab. Below this the whole river takes the name of Panjnud.

GHARSI, in the Mahratta country, a tribe of musicians.

GHASAL. ARAB. Mahomedans have two kinds of ablution or lustration,—the Ghasal or legal washings for all classes, after any kind of bodily uncleanness, such as the pollutio nocturna, menses, coitus, or childbirth, for until purified it is unlawful to eat, pray, touch the Koran, or go to the mosque. If the legal Ghasal be not needed, nevertheless, before prayer, the Wazu or washing in a prescribed manner of the face, hands, and feet, is indispensable. It occupies two or three minutes. The Wazu is only needed when any minor cause of impurity, as in performing the natural functions, has occurred. Where water is not to be had, the Teyammum, or rubbing the face, legs, and hands with fine dust or dry sand, suffices.

GHASI, a servile race in Central India. Wherever there are Kol there are Ghasi, and though evidently of an entirely different origin, they have been so long associated that they are a recognised class in the Kol tradition of creation, which assigns to them a thriftless career, and describes them as living on leavings or on charity. There are not fewer than 50,000 Ghasi in the Kol countries. Their favourite employment is that of musicians. No ceremony can take place, or great man move, without the accompaniment of their discordant instruments—drums, kettledrums, half-drums, and huge horns—to proclaim the event.—*Dalton, Ethnol. of Beng.* p. 325.

GHASI DAS was a Chamar or leather-worker, who lived in Ch'hatisgarh in the early part of the 19th century. He withdrew himself for six months into the forest, and when he returned he urged the people of his caste to renounce the worship of idols, and worship only the Sad'h nam or true name. He died in A.D. 1850, and his son, who succeeded to the office of leader, was murdered in 1860 by Rajputs, whom he had offended. The murdered man's place was taken nominally by his son, but really by his brother, Agur Das. The sect is now split into two great factions, those who smoke tobacco, and those who deem it to have been prohibited by Ghasi Das. At the time of the census of 1871, the number of the sect in the Central Provinces was 266,000.

GHAT. HIND. A term employed in India to designate a ferry or landing place on a river, or a quay or wharf; also a range of hills, or the scarped wall of a table-land, or the defile or pass leading through such. The Western Ghats or Syhadri range extend from the valley of the Tapti to the gap of Palghat, a distance of 800 miles. They are clothed with dense forests, with few inhabitants. The coast-line from the sea to their base is generally flat and low, with occasional spurs or solitary hills, but the ghats rise abruptly, almost scarped, to an average height of 3000 feet. Purundar is 4472, and Mahabaleshwar 4700. Matheran is a projecting spur. The Eastern Ghats extend from Orissa to Coimbatore, along the eastern or Coromandel side of the Peninsula of India, at distances of 50 to 150 miles from the Bay of Bengal. They are steep, and well clothed with forests. The country lying between them and the sea is low, scarcely rising above a hundred feet above the sea. Towns, as Hinginghat in lat. 20° 34′ N., and Palghat in the south of the Peninsula, have their names from the passes; and Hindus speak of Bala-ghat and Paen-ghat, above or below the Eastern Ghats. The chief passes in the western range are the Thul, Bhor, and Ram Ghats.

In Rajputana, Antri means a defile, a tract surrounded by mountains. The Antri of Mewar is fertilized by the Brahmani, which joins the Chambal after a course of thirty miles through a singularly diversified country.

The Ghatiya is a Brahman who attends at ghats where Hindu pilgrims bathe, to take care of their clothes, and supply sandal, flowers, etc. He exacts certain fees as a right, denouncing imprecations on any who resist his exactions. These people sometimes repair to a distance to escort pilgrims to their places of ablution.

Ghat-manjhi, is a ferryman; also a man who regulates the hire of boats, supplies, etc.

Ghatwal, a guard of the passes in the mountains of Bengal.

GHATAK or Ghataki, in Bengal, matchmakers, men or women.

GHATA-KARPARA, one of the nine learned men of the court of Vikramaditya.—*Dowson.*

GHATATOP. MAHR. A covered conveyance, and framed for concealing a woman.

GHATIKA. SANSK. An Indian hour, twenty-four minutes European time. Ghatka-patra, a clepsydra. See Danda.

GHATWAN, in Bengal, a man of a low caste, frequently a predial slave.

GHAZA. ARAB. In Mahomedanism, an expedition against infidels. The term Ghazi is applied to those who fight for their religion to the death; also a gallant soldier; a hero.

GHAZAL. ARAB. In Persian poetry, an ode. It should consist of not less than five, or more than eighteen, couplets, the last line of each couplet terminating in the same letter of the alphabet. The two first lines of the ode rhyme together, after which every alternate line; and the last verse always contains the takhallus, the assumed literary name of the poet. A poem on the subjects of love and wine, interspersed with moral and satirical observations.

GHAZAN, son of Kai-Khatu, and nephew of Kablai Khan, succeeded to his father's throne in A.D. 1295. He was a brave soldier and able statesman.

GHAZI. PERS., HIND. A Mahomedan soldier

fighting for his faith; a religious warrior; one who has slain an infidel. Properly speaking, a man becomes a Ghazi only in war against unbelievers (Kafir), such as Christians, Jews, and idolaters, as Hindus, Buddhists, etc. The Sunni of Central Asia consider Shiah Mahomedans as unbelievers, and enslave them. The Othoman Turks have never recognised this theory, considering the Persians as only heretics (Rafiz, Mulhid).—*P. Arminius Vambery, Bokhara*, p. 351.

GHAZI MIYAN, a Mahomedan saint in high repute with the agricultural and lower classes of the N.W. Provinces, except in Dehli, and included among the Panch-Piri, or five saints. The Mirat-i-Musaudi says he had a dream the night before his death, in which his mother came and placed a bridal chaplet on his brow, as being indicative of the crown of martyrdom with which he was to be honoured on the following day. He is partly on this account called Gajna Doolha and Salar Chhinula. An annual festival is celebrated in his honour in most large towns of India, but particularly at Barech, in the month of Jeth. It is commonly called the Shadi, or marriage of the saint, in allusion, according to another tradition, to his having suffered martyrdom on the eve of his nuptials. The festival is equally popular with the Hindus and Mahomedans. Who this Ghazi Miyan was, is a question on which even Mahomedan authorities are not agreed. Elliot, quoting M. Garcin de Tassy, in his Mémoire of the Musalman Religion in India, was of opinion that it is not his shadi or marriage, but his shahadat or martyrdom, that is represented at the festival. He is also said to have been a nephew of Mahmud of Ghazni, born at Ajmir, and killed in battle with the Hindus at Barech, after Mahmud's death.

GHAZIPUR is the name of a town and of a district in the N.W. Provinces of India. The town is in lat. 25° 18′ 36″ N., and long. 83° 35′ 13″ E., and has a population of 38,853. The district lies between lat. 25° 18′ 31″ and 26° 2′ 10″ N., and long. 83° 6′ 20″ and 84° 42′ 40″ E., with an area of 2167 square miles, and 1,345,470 inhabitants. The town is on the left bank of the Ganges, 64 miles N.E. of Benares, 351 feet above the sea. The palace of Kasim Ali Khan also is there. Rose-water and otto (atr) of roses are largely made.

The district, in 1871, had, besides Brahmans, Rajputs, and Banya,—Ahir, 171,216; Chamar, 122,075; Kayasth, 22,680; Kurmi, 18,136. It is one of the hottest and dampest districts of the N.W. Provinces. The district can boast a long history of its own, stretching far back into the earliest days of Aryan colonisation. Carved monoliths bear witness to a very ancient Hindu civilisation; and one in particular, at Bhitri, contains an inscription of Samudra Gupta, who probably reigned over the surrounding country as far as Kanouj, about the end of the 4th century A.D.

Asoka erected here one of his well-known pillars, and at least two stupas. In 1805, Lord Cornwallis died here, and a monument, with a statue by Flaxman, was erected to his memory. He had been appointed Governor-General a second time, and was proceeding up the country, when he fell sick and died.—*Tr. of a Hindoo*, i. p. 121; *Imp. Gaz.*

GHAZNI, a town and fortress of Afghanistan, in lat. 33° 34′ N., and long. 68° 18′ E., and 7726 feet above the sea, 85 miles from Kābul, 233 miles N.E. of Kandahar, on the left bank of a river bearing the same name, at the termination of the well-known Turnak valley. It is composed of 3500 mud houses, which have flat roofs, with small windows in the upper storey. The circumference of the wall is only a little over one mile. The citadel is almost in the centre of the town, standing upon the summit of the natural mound which forms the city. The wall embraces the whole of this hill, and regarded from a distance, Ghazni may be said to form a square. The streets are dark, narrow, irregular, and dirty, and the houses several storeys high, with a population of Afghans estimated at 10,000 souls, some Hazara labourers and Hindu shopkeepers. The chief trade consists of grain, fruits, and madder. It was captured by the British Indian army in 1839 (22d July) under Sir John Keane, and again in 1841 under Sir T. Wiltshire. It was covered by the British army under General Stewart in 1880. Its position gives a dominance over all Afghanistan. From November to the middle of March, snow lies on the ground. In A.D. 976 it was made the seat of government of Abustakin, a Bokhara adventurer, who was succeeded by Sabaktagin, father of Mahmud.

Mahmud's empire extended from the Tigris to the Ganges, and from the Oxus to the Indian Ocean. It fell to pieces on his death, and in 1151 Ghazni was stormed by Ala-ud-Din, prince of Ghor, who massacred the inhabitants on the spot, with the exception of those of rank, whom he conveyed to Ghor, and there killed them, using their blood to moisten the mortar with which he constructed fortifications.

From Ghazni westward, all along the valleys of the Tarnak and Helmand down to the basin of Seistan, the whole country is covered with the ruins of cities, obliterated canals, and deserted cultivation, all assigned to the devastation of the Tartars in the 13th and 15th centuries, when the Arab rule was overthrown. Ghazni has the repute of being a very ancient site. Wilford, following Sanskrit authorities, tells us that the kings of the Yavana and Deucalion resided at it. He further tells us that its proper ancient name was Sabal, Zabal, or Saul, as written by Chrysococcas, whence he infers it to be the Ozola of Ptolemy. He also conjectures it to be the Oscanidati of the Pentingerian tables, noted as twenty-two farsangs from Asbana, which he considers Kābul, and thirty-five farsangs from Rupha, which he would identify with Shahr Safar. The annals of the Yadu of Jeysulmir state that long anterior to Vikrama they held dominion from Ghazni to Samarcand; they established themselves in those regions after the Mahabharat, but on the rise of Mahomedanism, or the pressure of other races, they were again impelled towards the Indus river. They assert that Ghazni is properly Gajni, founded by the race of Yadu; and in a curious specimen of Hindu geography presented by Colonel Tod to the Royal Asiatic Society, all the tract about the glaciers of the Ganges is termed Gajlibun, or Gajlibu, the 'Elephant Forest,' elephant wilds. There is a Gujingurh mentioned by Abul Fazl in the region of Bijore, inhabited by the Sultano, Jadun, and Yusufzai tribes.

Since the 10th century of the Christian era, the

history of this city is but another name for that of the rulers of Afghanistan and Hindustan. It is the starting-point for four practicable routes into India, which are the Kuram, the Urgundeh, the Dawar, and, most important of all, the Gomul, and under a settled administration Ghazni would become a very flourishing town. The country round Ghazni is of remarkable fertility. It is celebrated for its orchards; and the merchants carry on a very considerable trade with India in this and other products, such as tobacco, cotton, etc. On the north of the town, about half a mile from the gate, rises the first of Sultan Mahmud's minars, or towers; the other is about 400 yards beyond it, in the same direction. They both rise alone, based upon rough stone-work The most northerly is the handsomest structure, but both are exquisite specimens of brickwork. They are about 140 feet in height, and much damaged.

The following emperors have reigned in Hindustan since the Ghaznian conquest:—

Ghaznian Emperors began to reign:—			
Mahmud I.,	A.D. 999	Ibrahim I.,	A.D. 1058
Muhammad I., Nusaud I.,	1030	Musaud II.,	1089
Modud,	1040	Arsillan,	1114
Abul Hasan,	1049	Bahram I.,	1118
Abul Rashid,	1051	Khusru I.,	1152
Farokhzad,	1052	Khusru II.,	1160
Ghorian Kings.			
Ala-ud-Din,	1152	Shahab ud-Din,	1176
Saif ud-Din,	1156	Mahmud,	1206
Ghaias-ud-Din,	1157		
Slave Kings.			
Kuttub,	1206	Bahram,	1239
Eldoz, Aram, Altamsh,	1211	Musaud,	1241
Firoz I.,	1235	Mahmud,	1246
Sultana Rizia, empress,	1236	Balbun,	1266
		Kei Kobad,	1286
House of Khilji.			
Jalal-ud-Din,	1288	Omar,	1316
Ala-ud-Din,	1295	Mubarik,	1316
House of Taghalaq.			
Ghaias ud-Din I.,	1321	Abubakr,	1389
Muhammad,	1325	Nasir ud-Din,	1390
Firoz,	1351	Mahmud,	1394
Ghaias-ud-Din II.,	1388		
Syud Dynasty.			
Khizer,	1414	Muhammad,	1435
Mubarik,	1421	Ala-ud-Din,	1444
Dynasty of Lodi.			
Rehlol,	1450	Ibrahim,	1517
Secunder,	1488		
Moghul or Mongol Emperors.			
Baber,	1525	Humayun,	1530
Sur Dynasty.			
Sher,	1540	Muhammad Adili,	1553
Selim,	1547		
Moghul Dynasty restored.			
Humayun,	1555	Ferokhsir,	1713
Akbar,	1556	Ruffeh-u-Dirjat, Jahangir,	1719
Jahangir,	1605	Ruffeh-u-Dowla,	1719
Shah Jahan,	1628	Muhammad Shah,	1719
Aurangzeb, or Alamgir I.,	1659	Ahmed Shah,	1748
Bahadur Shah,	1707	Alamgir II.,	1754
Jahander Shah,	1712	Shah Alam,	1760

—*Tod's Rajasthan; Rennell's Memoirs; Elphinstone*, p. 433; *Vigne's Personal Narrative; Journeys; MacGregor*, pp. 250, 263, 272.

GHEGURA, Hind., also Gheghura, is the unripe pod of gram; also the unripe bole of cotton, which is known also by the names of Goolur, Ghenti, and Bhitna. When it bursts it assumes another name. When this change in the plant occurs, it is usual eastward of the Jumna to select the largest plant in the field, and, having sprinkled it with butter-milk and rice-water, it is bound all over with pieces of cotton taken from the other plants of the field. This selected plant is called Sirdar or Bhoguldaee, *i.e.* mother-cotton, from Bhogla, a name sometimes given to a large cotton-pod, and Daee (for Daiya), a mother; and, after salutations are made to it, prayers are offered that the other plants may resemble it in the richness of their produce. To the west of the Jumna there is rarely a Bhoguldaee; but when the pods begin to burst, women go round the field, and, as a kind of lustration, throw salt into it, with similar supplications that the produce may be abundant. Tibullus, lib. ii. el. i. says,—

'Dii patrii, purgamus agros, purgamus agrestes;
Vos maia de nostris pellite limitibus.
Neu seges eludat messem fallacibus herbis.'

The practice appears to be observed with a similar object, and in somewhat similar fashion, to the Ambarvalia of the Romans, and the Field-Litanies of the English Church Rogation or Gang-days.—*Elliot.*

GHERIAH, in the Ratnagherry district, Bombay, was the chief town and strongest port of Angria. In 1756 it was attacked and taken by a British squadron under Admiral Watson, and on land by an army under Clive. A Mahratta army was present, but held aloof.

GHERIAH. 21 miles from Jungipore is Sooty, where the Bhagirath branches off from the Ganges. The neighbourhood of Sooty is remarkable for the battle of Gheriah, fought between Ali Verdi and Sarfaraz Khan in 1740. There was another battle fought in 1763 between Mir Kasim and the British.—*Tr. of a Hind.* i. p. 85.

GHET KUCHU. Beng. Typhonium Orixense; also called Ghet-kol. Tubers the size of a small egg, exceedingly acrid while fresh, and used as a counter-irritant in poultices, also as an application in snake-bites. They are likewise given inwardly in doses of from 20 to 30 grains. Roxburgh describes this arum as a most powerful stimulant in proper hands.—*O'Sh.* p. 625.

GHETTA. Hind. A broad curved slipper, worn in Dehli by women and by effeminate men.

GHEWARI. Mahr. A retail dealer, in some places limited to those who sell garden produce.

GHI. Guj., Hind. Clarified butter.

Ghruttham, grita, Sansk. | Neyi, . . . Tam., Tel.

Ghi is largely manufactured in all the south of Asia, and generally sells at 25 per cent. above the cost of butter. Ghi is made in very large quantities in the jungle tracts of the Bar. The finest ghi used on the Bombay side of India comes from Kurachee, near the mouth of the Indus. Butter is churned from the milk as soon as milked; but the people of Southern Asia use ghi. In preparing it, the butter is boiled until all the watery particles and curds have been thrown off by repeated skimmings. When the liquid is clear oil, it is poured into a vessel to cool, which it does in a granulated form, and if originally well boiled, will keep for years without taint. Instances are known of its preservation for 200 years in

deserted castles. Ghi and sandal-wood are used as a burnt-offering, in Bombay, to invoke Lakshmi. Ghi is exported to all the sea-coast of Eastern and Southern Asia to the extent of 400 and 500 tons annually.

1876-77, ...	1,004,661 lbs.	Rs. 3,57,250
1877-78, ...	1,044,687 ,,	3,76,504
1878-79, ...	902,835 ,,	3,38,800
1879-80, ...	1,236,433 ,,	4,54,844

GHIAOUR, the Gabr or fire-worshipper, now synonymous with Kafir, is applied to the Parsee people who preceded the Mahomedans, as well as to Europeans.—*Rich's Kurdistan*, i. p. 30.

GHIGOWAR. HIND. Aloe Indica, *Royle*. In Southern India, plants of the ghigowar, ghicwar, or the kulbunda, Aloe perfoliata, are suspended with their roots upwards, with a longitudinal incision in each leaf, to permit the aroma of the juice to become apparent, and disperse mosquitoes from the room.

GHILIAK, a nomade race dwelling on the coast of Tartary and Siberia, as far as Ayan on the north-west extremity of Saghalin. They are low in stature, stout, and rather broad in proportion to their height. Shape of the head round; cheek-bones prominent; eyes oblique; well-defined eyebrows, more arched than those of the Chinese; hair coarse, black, and bound into a tail, and occasionally wearing a coarse, black beard; hands small and delicate, with well-shaped nails; complexion fair and ruddy. Their language is different from the Tungusian dialects along the river. According to Rinso, polyandry prevails amongst the Smerenkur Ghiliak. The women are small, but prolific.—*Dr. Latham's Descriptive Ethnology; Ravenstein's Russians*, p. 391.

GHILJI, a tribe in Afghanistan, which, with the Abdali, forms the bulk of the Afghanistan population. The Ghilji occupy the principal portion of the country between Kandahar and Ghazni, and are the most numerous of the Afghan tribes. They are also found between Farrah and Herat, and again between Kābul and Jalalabad. The Ghilji between Kandahar and Ghazni comprise the great families of the Ohtak, the Thoki, the Tereki, and the Andari, with their subdivisions. The Ohtak are acknowledged the principal of the Ghilji families, and in the period of their supremacy furnished the sovereign. At the present day the Ghilji have two great sections, the Ohtak or Hotaki, with four clans, Sakzai, Tunzai, Sat Khel, and Shagri; and the Turan or Tokhi, with nine clans, Shah Alam, Shah-u-Din, Kalu, Miranzai, Jalalzai, Bakarzai, Pir, Likaki, and Amir-khan. The Ghilji are both an agricultural and a pastoral people, dwelling in villages and forts, as well as in tents. They are a remarkably tall fine race of men, with marked features, the Ohtak and Thoki peasantry being probably unsurpassed, in the mass, by any other Afghan tribe for commanding stature and strength. They are brave and warlike, but the generality of them have a sternness of disposition amounting to ferocity, and their brutal manners are not discountenanced by their chiefs. Some of the inferior Ghilji are so violent in their intercourse with strangers, that they can scarcely be considered in the light of human beings; while no language can describe the terrors of a transit through their country, or the indignities which are to be endured.

Although the Ghilji are considered and call themselves Afghans, and, moreover, employ the Pushtu or Afghan dialect, the name is evidently a modification of Khalji or Khilaji, that of a great Turki tribe, mentioned by Sharif-ud-Din in his history of Timur. The testimony of Ferishta, while clearly distinguishing the Ghilji tribes from the Afghans, also establishes the fact of their early conversion to Mahomedanism. Still there is a tradition that they were at some time Christians of the Armenian and Georgian churches. This tradition is known to the Armenians of Kābul; and they instance, as corroborating it, the practice observed by the Ghilji of embroidering the front parts of the gowns or robes of their women and children with figures of the cross, and the custom of their housewives, who, previous to forming their dough into cakes, cross their arms over their breasts, and make the sign of the cross on their foreheads after their own manner.

East of Ghazni, in the province of Zurmat, are the Suliman Khel Ghilji, exceedingly numerous, and notorious for their habits of violence and rapine. These have no positive connection with the Thoki or other tribes, neither have they one acknowledged head, but are governed by their respective malik, who are independent of each other. Dost Muhammad Khan reduced them to the condition of tributaries, after having destroyed a multitude of their castles. Ghilji girls from the age of eight to twenty are not much veiled, but they twist their hair, and tie it like a cake, which hangs over their forehead, and a little below their eyebrows. The centre of the lock (or hairy cake) is adorned by a gold or silver coin, which in black hair shines prettily. This is the sign of virginity amongst the Ghilji. The women allow their twisted locks to hang upon their ears, and even as far as their arms.

At present (1879) they appear to be a nation of families submitting to their natural heads, and having the patriarchal institutions nearly complete. But in the year 1707, Mir Wais, a leading Ghilji at Kandahar, was seized by the Persian governor and sent to Isfahan, where, however, he ingratiated himself, and was allowed to return. On his arrival he raised a rebellion, defeated the Persian governor, and before his death in 1715, after a reign in Kandahar of eight years, repulsed three armies sent against him.

His son Mir Mahmud, in 1820 invaded Persia. He moved on Kirman with 12,000 men, 5000 of whom perished amid the intervening deserts; but the town was taken and held for four months, when it was retaken by Lutf Ali Khan, and Mir Mahmud escaped with a few followers.

In 1722 he raised an army 28,000 strong, and again took the town of Kirman, but failed to take the citadel; failed also to take Yezd, but marched on Isfahan, which he invested for eight months, when Shah Husen abdicated, and Mir Mahmud massacred the troops who had defended the city. He took Kasvin, whose inhabitants he massacred. In 1724 he reduced Irak and Fars, and took Shiraz after an eight months' siege; but becoming more cruel, he was put to death, and his relative, Mir Ashraf, was raised to the throne. He defeated the Turks near Burujard, took Kasvin, and defeated Thamasp, son of Shah Husen; but Nadar Kuli Khan advanced against and defeated him, and he fled to Isfahan, leaving 12,000 dead on the field. He was again defeated by Nadar Kuli Khan near

Isfahan, losing 4000 Afghans, and fled to Shiraz. He again met Nadar, only again to be defeated, and his soldiers then made terms with Nadar, and Mir Ashraf fled into Seistan, where he was murdered by a Baluch chief. The seven years of the Ghilji occupation of Persia cost that country a third of its population. The Daurani tribe assumed the sovereignty of Kandahar, and put down a subsequent attempt which the Ghilji made to reassume sovereignty. Towards the middle of the 19th century, when the British advanced to place Shah Shuja on the throne, the Ghilji opposed them, but were driven off on the 22d July 1839. In the same year, Captain Outram with a very small body of troops marched all through the Ghilji country. In 1840 Captain Anderson defeated the Ghilji at Tazi. In 1841 they were defeated by Colonel Wymer near Kalat-i-Ghilzai. But on the 9th October 1841 they attacked Colonel Monteith at Butkak; on the 12th they attempted to occupy the Khurd Kābul pass; on the 14th they attacked the British camp in the Khurd Kābul valley, they attacked Colonel Sale's force in the defiles of Jagdalak, and they hung upon Sale's troops till they reached Jalalabad.

On the 6th January 1842 the British began to retreat from Kābul, and from Butkak, till the last man of that force was killed or taken prisoner, the Ghilji surrounded them, attacking, plundering, massacring all. 3000 souls went down in the Khurd Kābul; at Tezin the number was raised to 12,000; at Gandamak 20 muskets were all that could be mustered, and in a few hours more these too were gone. The Ghilji drank their fill of British and Indian blood, in that brigade.

In the latter part of 1842 (8th September) they were repulsed in an attack on General Pollock's force, and again on that on Colonel M'Caskill's force.

In the south, on the 20th November 1841, they attacked Ghazni, and in March 1842 the garrison surrendered, and many of the sepoys were massacred. On the 9th December 1841 they invested Kalat-i-Ghilzai, and by May 1842 had completely surrounded it. On the 21st May they assaulted it in two columns, but were defeated with the loss of 400 men. They subsequently attacked General Nott at Bonei Badam, and the force of General Pollock at Tezin, Haft Kotal, and Jagdalak. Subsequently, in 1849, they were reduced by Amir Dost Muhammad Khan, who sent 25,000 Abdali against them; and when they again rebelled under Muhammad Shah, they were again reduced.—*MacGregor; Moorcroft's Tr.* ii. p. 360; *Masson's Journeys*, ii. p. 198; *Pottinger's Tr.* p. 200; *Mohun Lal's Tr.* p. 323; *Elphinstone's Caubul.*

GHINNI. Beng. The female head of an undivided Hindu family.

GHOONT, a Himalaya breed of horses, generally small, strongly made, hard-mouthed, and sometimes almost unmanageable. In ascending hill faces, or passing along the declivities of mountains, it is best to let them have their own way. Their common pace is a kind of amble, and they stop every now and then to breathe, when no application of the whip will move them. They are sure-footed, and sometimes halt at the edge of a precipice, to the terror of the rider. They are not so quick in ascending hills as the low-country horses, but they descend with double the speed, and endure great fatigue. The ghoont in Spiti are bred chiefly for sale. They have two breeds, one a small ghoont, never above 12 hands high, peculiar to the country; and the other a large breed, from 13 to 13½ hands high, is bought from the Chinese, and usually comes from Choomoortee; for a Chinese ghoont two years old, they give a Spiti ghoont four years old. All are equally hardy, and are kept out the whole winter, except the yearlings, which are housed. During winter the ghoont live on the roots of the stunted bushes, and are very expert at scraping the snow from off them with their fore feet. Many are killed during winter by wolves and leopards.—*Powell, Handbook; Capt. Gerard's Koonawur*, p. 112.

GHOOR, a lizard of Gujerat, which the natives believe to be poisonous. There are two kinds, according to native report, Putlah ghoor and Chundun ghoor. A venomous lizard will, however, be believed in by no naturalist until he has ocular demonstration of the existence of the poison apparatus. Hardly a snake is caught in India, that is not, according to the snake-catcher, the worst snake in the country. See Ghorphara.

GHOOS is literally a bribe; and no treaty or transaction was ever carried on in Rajputana without this stipulation. So sacred was the ghoos held, from tyrant usage, that the Peshwa ministers, when they ruled the destinies of their nation, stipulated that the ghoos should go to the privy purse.—*Tod's Rajasthan*, ii. p. 404.

GHOR, a mountainous country between Kābul and Herat in one direction, and between Kandahar and Balkh in another. It is practically independent, and is peopled by Mongol tribes. They are known to themselves and to the Afghans as the Hazara. According to Istakhri and Ibn Haukal, Ghor was bounded by the districts of Herat, Farrah, Dawar, Rabat, Kurwan, and Gharjistan, back to Herat, which were all Mahomedan countries; but Ghor itself was a country of infidels, containing only a few Mahomedans, and the inhabitants spoke a language different from that of Khorasan. In the 11th and 12th centuries the kingdom of Ghor comprised Afghanistan, Lahor, Sind, and Khorasan. The princes of Ghor are said to have belonged to the Afghan tribe of Suri, and their dynasty was allowed to be of very great antiquity even in the 11th century. Their principal cities seem to have been Ghor, Firoz Koh, and perhaps Bamian.—*Bellew; Elliot; Elphinstone's Caubul*, i. p. 244.

GHORAMANI, a Baluch tribe in the Dehra Ghazi Khan district.—*MacGr. N. W. F.* p. 531.

GHORBASTA. The climate of Makran generally, but especially at the level tract south of the mountains, is very unhealthy. The Ghorbasta or Ghorband in Makran are great structures, at times almost bearing resemblance to the Cyclopean remains of Europe. They are evidently remains of a people that occupied or passed through the country long prior to the advent of the present occupants, who know nothing of the builders, or of the uses of the buildings, and attribute them to kafirs or infidels. They are found usually in out-of-the-way places, narrow valleys at present stony and barren. They are placed always on declivities, or across the mouths of ravines. Their solidity and size are proportioned to the steepness of the declivity. Where there is only a gentle slope, the walls are narrow, low, and slightly built; but

where the descent is great, and the flow of water after floods and rains would be violent, they are of great thickness and height, and, as seen in the valley beyond Baghwana, supported and strengthened by buttresses or walls built at right angles. They always present a scarped face to the opposite side, which, when well preserved, is levelled off with the surrounding and higher ground. Those built across the mouths of ravines are very solid and high, and usually the builders have taken advantage of some mass of rock jutting out, as a sort of foundation. Those in slopes are never seen singly, but always in numbers varying with the extent of the ground to be covered, and placed in succession one behind the other. The intervening ground being levelled, is thus formed into a succession of terraces. They were constructed for the irrigation of the country. Those built across ravines were intended to form tanks for the preservation of the waters that come down at irregular intervals in floods. Those on slopes, to economize the distribution of water; the surplus water of one terrace running over and flooding the lower one, depositing as it went a layer of surface soil. The ground thus levelled of course became more valuable, freed from the irregularity and roughness which characterize these narrow stony valleys. They are almost confined to the provinces of Jhalawan, and are largest and most important in the southern and south-eastern portions of the province. The ancient city at Gunjjuk seems of the same date, and constructed by the same people. From the numbers and position of these structures, the people who built them must have been extremely numerous,—must have felt that the country as existing by nature was utterly incapable of supporting them; and they must have possessed an energy and ingenuity which the present races are totally without. It appears probable—nay, almost certain—that they must have swarmed eastward over the mountains from Makran, making their appearance on the south-west portion of the table-land. Gradually pushing eastward and northward, as their numbers increased, either rapidly by additions from without, or more slowly by increase of the population from within, they ascended to the various valleys as high as Kalat, when, discovering the great eastern outlet, the Moolla pass, they found an exit by it into the plains of India. How long they remained on the table-land, from whence they originally came, and over what countries they eventually distributed, are alike mysteries.

There are one or two points of slight resemblance between the Pelasgi, the builders of the Cyclopean walls of Greece, Italy, etc., and the ghorbasta builders, suggesting that they might have been a kindred people with kindred habits. The Pelasgi came from Asia, not from Asia Minor, not from Syria, not from Assyria, not from Persia, but probably from that birthplace of emigration, the tract north and north-east of Persia. The ghorbasta builders probably came from the same tract, and were not Makranis, nor Persians, nor Assyrians. The Pelasgi existed only a few generations in Greece (about 250 years), before they were turned out by the Hellenes; they must therefore have brought with them when they entered the country their propensity for building massive walls, and commenced their work almost immediately on arrival. It was probably the same with the wall-builders of Baluchistan; they only remained in the country long enough to allow them to extend northward as far as Kalat, when, meeting with the Moolla pass, they debouched into the plains. Their art was a fully-developed one before they arrived here to carry it out. The Pelasgi arrived in Greece about 1800 B.C. This date seems to accord roughly with the advent of the unknown people into Jhalawan.

The ghorbasta buildings differ considerably, however; for, when compared with the Cyclopean remains, they are slight, most roughly executed, and insignificant; yet they evince a like instinct and habit in two races which probably came originally from the same region. Lieutenant Aytoun, in his Geological Report on a portion of the Belgaum Collectorate, given in Mr. Carter's Geological Papers on Western India (p. 392), mentions that certain gorges in the hills had been artificially bunded, and the Kadar are a terrace-cultivating race on the Pulney Hills in the extreme south of the Peninsula.—*Dr. Cook*, in No. vi. *Bombay Medical Transactions.*

GHORCHARRA, a subdivision of the Kurmi tribe. The literal meaning of the word, if rightly spelled, is a horseman; but Elliot is not sure that there may not be some connection between them and the Kurchurra whom Tod puts down in Chund Bardai's list of the royal races.—*Elliot.*

GHORI and Khilji were dynasties in Malwa, founded by Dilawar, of a family from Ghor.

Dilawar Ghori,	A.D. 1401,	A.H. 804
Hushang Ghori,	,, 1405,	,, 808
Muhammad Ghori,	,, 1432,	,, 835
Mahmud Khilji,	,, 1435,	,, 839
Ghaias-ud-Din Khilji,	,, 1482,	,, 887
Nasar-ud-Din Khilji,	,, 1500,	,, 906
Mahmud Khilji II.,	,, 1512,	,, 916

GHORPHARA, a powerful Mahratta family, who hold lands at Gunjundurghur, Sondur, Madhol, and Akulkote. They derive their name from the ghorphar or iguana, from a tradition that Maloji Rao, the founder of the family, scaled and took a fortress by its means, by fastening a rope to its tail. See Ghoor.

G'HOS, also G'hosi, herdsmen, said to be descended from the Ahir race. Most of them have now been converted to Mahomedanism; indeed, the name is generally considered, according to the dictionaries, to be exclusively applied to Mahomedan milkmen. The name is derived from a Sanskrit word signifying a cattle pen. The eastern G'hosi who have been converted are called Bundi G'hosi. In many parts of the country, as in Dehli, the G'hosi are those who trade in milk, without any reference to their caste or religion.

GHOSE, a corruption of Ghosh, in Bengal a division of the writer caste, used by them as a family name, as Chandra Ghose.

GHOSTS are believed in by the Hindu and Mahomedan and Buddhist races, and by all the aboriginal tribes of British India. They are of many kinds, and the spirits of evil are supposed both by Hindus and Mahomedans to move abroad at noon. In this they concur with the modern Greeks, who believe that it is especially at midday that the Nereids exercise their hurtful power. At that time they rest in the shade of trees, especially of the plane and poplar, and by the side of springs and running water, and those who pass by are apt to receive a stroke. See Spirits.

GHOUL. PERS. According to superstitious belief in Persia, a fair woman of about twenty years of age, that preys at night on dead bodies. The ghoul-i-biaban, or 'demons of the desert,' are also described as a hideous race, that particularly infest a dreary tract in the north of Persia, not far from Tehran, bearing the portentous name of Malik-al-Mout Darrah, or 'Valley of the Angel of Death.' The ghoul resembles the Boddach of the Scotch Highlanders.

GHOUS-ul-AZAM, the title of Abdul Kadar Ghilani, q.v.

GHRAB or Grab. ARAB. A sea-going vessel trading between the Malabar coast and Arabia.

GHUGREE, hollow rings with pebbles in them, worn on one or both thumbs, and rattled.

GHULAB SINGH, a maharaja, the first ruler of Kashmir, a Dogra Rajput; died on the 2d August 1857.

GHULAM. ARAB. A slave, a servant; a term in frequent use by persons to indicate their readiness to obey, as 'Main ap ka Ghulam hun,' I am your slave; also often used as a part of a name, as Ghulam Ali, Ghulam Hasan, Ghulam Mahomad, servant of Ali, Hasan, Mahomed, etc.

Elliot considers that in this word we have the origin of the English gallant, gallantry, gala, etc., Ghulam being derived from the Arabic Gh'l'm, libidinosus, and hence it signifies a comely youth, one chosen as an attendant or page for his personal endowments. The Spaniards borrowed it from the Arabs, and called a handsome young man Galanta, from which are derived Galante, Galanteur, Galanteria, all subsequently adopted into the European tongues through the influence of the amatory poetry of the troubadours. In Persia, Ghulam is now applied to an inferior civil officer or policeman, answering to a cavass in Turkey. Several of these are attached to each European embassy in Persia. The Shah has also a number attached to his person, who are called Gulam-i-Shah; these form a kind of bodyguard. The Russians use their Ghulam only for posting purposes, to accompany members of the embassy, and have a body of Cossacks for escort; the British embassy Ghulams are used for escort, and also for posting purposes, the regular native Indian cavalry who used to form the escort of the British ambassador having been discontinued during the mission of Sir Gore Ouseley, which lasted from 1812 to 1818.

In Persia the Kooleragassee is the superior of the slaves. Each of the princes, as well as the king, has a certain number of confidential troops, who act as guards or agents on all important occasions, and who are called Ghulam or slaves.—*Elliot; Fraser's Khorasan*, p. 105; *Ferrier's Journ.* p. 21.

GHULAM HUSAIN of Zaidpur, author of *Riaz us Sulatin*, a Persian history of Bengal, up to A.D. 1787-88.

GHULAM HUSAIN KHAN, a Mahomedan noble of Bengal, author of the historical work, Siyar-ul-Mutaakhirin, a history of India from A.H. 1118-1195, A.D. 1706-1782.

GHULAM KADAR, a Rohilla chief at Dehli, who in 1788, learning that Shah Alam II. was to remove him from court, surprised the palace, maltreated and tortured the emperor, maltreated the children before the emperor's face, ordered the emperor's eyes to be pierced, dishonoured the ladies of the court, and gave up the palace and city to pillage. He fled, and at length, galloping alone from a fort in which he had taken refuge, his saddle stuffed with plunder, he was thrown from his horse, and picked up by his pursuers, the Mahrattas, who deprived him of his limbs, and exhibited him in Dehli in a cage, in which he perished. It is said that he himself with his dagger destroyed the emperor's eyes.

GHULGHULEH, a city in ruins, south of Bamian, destroyed by Chengiz Khan. It is in the valley of Bamian, and Cufic coins are occasionally dug up in it.—*MacGregor.* See Gulgula.

GHUMAO, HIND., properly Kahman, a land measure in the Panjab. A pair of good oxen will plough a ghumao in twenty-four hours.

GHUN. HIND. A destructive weevil that attacks wood and gram, the Calandra granaria. Ghungi, an insect that destroys growing grain. —*W.*

GHUNGOL, also Ghangol, the water-lily which produces the celebrated Nelofar or lotus flower. It yields a greenish fruit about the size of an orange. Its seeds are eaten by the poorer classes. —*Elliot.*

GHURYAN is situated in a level plain, with numberless plants of asafœtida. The Kakar, an Afghan tribe, come up in swarms with their families, and disperse themselves over the plain. They make longitudinal incisions along the stalk, and then protect the asafœtida plants with small pieces of clay or bricks, to keep off the rays of the sun. A dark-coloured secretion oozes from the plant, and congeals over the fence stones. The people, with small bags of skin hanging to their necks, collect the asafœtida. The asafœtida plant is nearly five feet high, and has large leaves.—*Mohun Lal's Travels*, p. 273.

GHUZZ. The Mameluks of Egypt were known by this name. Yomut, Goklen, Chaudar, and Imraili have dwelt from time immemorial in the steppes to the east of the Caspian; while Sarika and Salar and Kara Turkomans inhabited, in the 9th century, if not their present ranges, at least the neighbouring steppes between Balkh and Anjoi, and both divisions are alike called the Ghuzz by contemporary writers. Chinese historians call them barbarians of the mountains; and the trouble they caused from time to time to the Chinese, would warrant a more appropriate title.

G'HWALARI or Gomal, a pass which offers an easy route from Afghanistan to the Derajat.

GHWARAZAI, a small section of the Kakar tribe of Afghanistan, numbering about 110 men. —*MacGr. N.W.F.* p. 533.

GHYAS-ul-LOGHAT, an Arabic dictionary.

GHYLONG, a Buddhist priest of the Bhotia.

GIALBO. TIBET. In Chinese, Tsan-pu. Rulers of Tibet till the 11th century.

GIBRALTAR, in lat. 36° 7′ N., long. 5° 21′ W., was captured from the Spaniards in the year 711, and it remained in possession of the Arabs till the early part of the 14th century, when the Spaniards retook it, but lost it again in 1333. It was then held by the Arabs until its second recovery by the Spaniards, in 1462. On the 24th July 1704, it was suddenly assailed and captured by the British under Sir George Rooke, the garrison being small and unprepared for defence. The Spaniards, occasionally assisted by the French,

have since made various attempts to recapture the place, but without success. Burton says Gibraltar is Jabal-ul-Tarikh, and 'Mt. Ethne that men clepen Mounte Gybelle' is 'Monte Gibello,' the mountain *par excellence.—Burton's Mecca.*

GIBSON, ALEXANDER, M.D., born at Laurencekirk, October 1800. In 1825 he was appointed to the Bombay Medical Establishment, and served throughout the Burmese war as flag surgeon to Sir John Hayes. He was from 1837 to 1860 Conservator of Forests, and contributed largely to scientific journals,—On Indigenous Materia Medica, On Leeches, On Sugar-making, On Useful Plants, On the Cultivation of Senna, Hyoscianus; Forest and Garden Reports, a Handbook of Indian Forestry, on Kino, on the Shikargahs of Sind, on the Bassia trees, on the bark of Alstonia scholaris.

GIGANTOCHLOA APUS. *Kurz.* The Bambusa apus, *Roemer;* grows in the Archipelago at elevations up to 5000 feet, height of stem to 60 feet. G. aspera, *Kurz*, attains to 170 feet of height.—*Von Mueller; Gamble.*

GIGARTINA LICHENOIDES. *Lamouroux.*

Sphærococcus lich., *Ag.* | Gracillaria, lich., *Greville.*

The whole thallus of the Ceylon moss is sometimes imported from Ceylon, and used in Britain for dressing silk goods.—*O'Sh.* p. 668.

GIGARTINA SPINOSA. *Grev.*

Euchema spinosum, *Ag.* | Fucus lichenoides, *Willde., non Linn.*

Kyouk puen, . . Burm. | Agar-agar, . . Malay.

Edible sea-weed is found in the Andamans and at Termoklee Island. The Chinese collect it on their coast to a great extent, using it in the arts and also for food. It affords an excellent material for glues and varnishes. It is simply boiled, and the transparent glue obtained is brushed upon a porous kind of paper called sha-chi, which it renders nearly transparent. It is also used as a size for stiffening silks and gauze, and is extensively employed in the manufacture of lanterns and in the preparation of paper for lattices and windows. This and other kinds of fuci are boiled down to a jelly by the islanders on the south, and extensively used for food. It is also made into a sweet glutinous jelly, called in Canton, Wong-leung-fan, which is used as a sweetmeat, and sold on stalls in the streets. It is brought from New Holland and New Guinea and other adjacent islands. Between 400 and 500 pikuls are imported annually by the Chinese, at a prime cost of from one to two dollars per pikul. Its cheapness and admirable qualities as a paste render it worthy the attention of other countries; when cooked with sugar, it resembles calf's-foot jelly. Of the three kinds of agar-agar sent to the Exhibition of 1862 from Malacca, the first quality was from a sort of tripe-de-roche, an edible sea-weed which grows on the rocks that are covered by the tide. It is much used for making a kind of jelly, which is highly esteemed both by Europeans and natives for the delicacy of its flavour, and is exported to China at 19s. per 133⅓ lbs. The agar-agar of the second quality from Macassar and the Celebes, is an edible sea-weed collected on the submerged banks in the neighbourhood of Macassar by the Baju Laut or sea gipsies, for exportation to China, at 12s. 6d. per 133⅓ lbs. The agar-agar of Singapore is collected on the reefs and rocky submerged ledges in the neighbourhood of Singapore, and constitutes the bulk of the cargoes of the Chinese junks on their return voyages. It is much used as a size for stiffening silks, and for making jellies. The quantity shipped from Singapore is about 10,000 pikuls annually. Though deserving of being better known, it does not appear to be an article of Indian import, or, if so, it is brought in under some other name.—*Hon. A. Morrison; Exhib. Jur. Reports and Catalogue; Simmonds; Tomlinson; Williams' Middle Kingdom*, p. 275. See Ceylon Moss; Edible Sea-weed; Gigartina tenax.

GIL. Pers. Earth, clay.

Gil-i-Abrorshi, a rough, hard, not brittle, pink earth, only used in native medicine; properly speaking, a deposit from a mineral spring containing sulphur. The sediment is collected and made into little cakes. But the Hasan dhup ordinarily seen in the bazar is a mere imitation, consisting of some earthy clay mixed with ground sulphur and formed into cakes, called probably Moses' Stone, from its lamellar structure, as if the tables of the law given on Sinai had been on slate tablets.

Gil-i-Farsi, a pink earth.

Gil-i-Irmani, Armenian bole, not now used in European medicine, but formerly so employed, and still used by natives.

Gil-i-Khardya, a red earth.

Gil-i-Kiria, a soft, laminated, nearly white clay, resembling chalk in appearance, hence probably the name.

Gil-i-Makhtum, a soft, rough, irregular, variegated marl, containing clay, deeply coloured by peroxide of iron, mixed with nearly white carbonate of lime.

Gil-i-Multani, fullers' earth. A soft, laminated white or pale yellow earth, used by the natives for cleaning their hair, and in medicine.

Gil-i-Safed, chalk, Calcis carbonas.

Gil-i-Zard, a pale yellow, tough, laminated earth, intermediate in colour between geru and gil-i-Multani, but resembling both in appearance. —*Powell.*

GIL, a culivator race E. of Ferozpur, who claim to be offspring of Jat mothers and Rajput fathers.

GILAUNDA. Hind. The flower of the Bassia latifolia, after it has fallen off. When the flower falls off, the pod or gula forms, and from this a useful arrack is prepared.

GILCHRIST, JOHN BORTHWICK, LL.D., M.D., born 1759 in Edinburgh, a medical officer of the Bengal army, who distinguished himself as an oriental scholar. He wrote a dictionary and grammar of the Hindustani language, and other books in that tongue. He formed the Hindustani or Urdu tongue. His attempt to form a universal writing character, in his 'Missionary's Portable Christmas-box and Cosmopolitan's Seasonable New Year's Gift,' did not succeed; and up till this time it continues a matter of discussion whether in the efforts to diffuse knowledge by means of printed books, the writing characters in use by the peoples of the south and east of Asia should be continued, or whether the Roman letters should be employed to represent them. He bequeathed property for educational purposes, which is being applied as scholarships. He died in 1841, nearly 82 years of age.

GILEAD, a broad belt of country lying between the river Jordan on the west and the great Syrian desert on the east.

GILGIT, a territory in High Asia, in lat. 35° N., and long. 74° E. The Indus river runs through it from N.E. to S.W. It is on the southern declivity of the Hindu Kush, between Chitral on the west and Baltistan (Little Tibet) on the east. In the Bunnu valley there are intermixed races, of whom may be noticed the Dardu of Gilgit and Chulas. According to Burnes, the mir of Badakhshan, the chief of Darwaz in the valley of the Oxus, and the chiefs eastward of Darwaz who occupy the provinces of Kulub, Shughnan, and Wakkan, north of the Oxus, also the hill states of Chitral, Gilgit, and Iskardo, are all held by chiefs who claim a Grecian descent. The whole of the princes who claim descent from Alexander are Tajak, who inhabited the country before it was overrun by Turki or Tartar tribes. To the west beyond Balti, the people of Astor, Gilgit, and Hunza-Nager speak different dialects of Dardu, while the Kashmir people have their own peculiar language. The Balti people of Little Tibet say that Ladakh, Iskardo, Khopalu, Purik Nagyr, Gilgit, and Astor are distinct Tibets.—*Burnes' Bokhara.*

GILL, MAJOR ROBERT, an officer of the Madras army, who devoted nearly twenty years of his life to copying and photographing the fresco pictures in the caves of Ellora and Ajunta. His devotedness, in dwelling in such lonely spots as in the ravine of Ajunta, is unparalleled in modern times. He died at Bhosawul on April 10, 1879, aged about 76. He received his commission in 1824, and was invalided on a brevet-majority in October 1852. He was a noted shikari, and a no less celebrated artist. Several of his copies of the paintings of the Ajunta caves, for which the East India Company liberally rewarded him, were unfortunately destroyed in a fire that took place at the Crystal Palace. His son, Captain Gill, R.E., who travelled across China, was murdered in Arabia in 1882, along with Professor Palmer.

GILLAR. HIND. Goitre. Gillar patr or Gillar-ka-patta, a sea-weed Laminaria, *sp.*, used as medicine for goitre. It is obtained solely *via* Yarkand from the shores of the Caspian Sea. Five or six maunds are imported. The word Patr is a leaf. Dr. Martin Honigberger refers Gillar-ka-patta to Laminaria saccharina, and alludes to a belief that it is found in a salt lake in Tibet, adding that some English physicians maintain it is brought from the Caspian Sea. He says it is useful in scrofulous ulcers in horses.—*Powell's Handbook.*

GILLESPIE. General Rollo Gillespie, an officer of the British army who served in the West Indies, the East Indies, and the Eastern Archipelago. On the occasion of the Vellore mutiny of 1806, he was in command of Arcot, and Sir John Fancourt was in command of Vellore. They were very intimate, having been quartered together at St. Domingo. Gillespie had been invited to dine and sleep at the quarters of Sir John Fancourt, on the very night the mutiny occurred (3 A.M. 10th July), so little was their suspicion of the fidelity of the sepoys. Just as he was about to start on the morning of the 9th July, public despatches were put into his hands, which compelled him to defer his journey; but at daybreak on the 10th July he mounted his horse to gallop over to Vellore in time for breakfast, and was scarcely in his saddle when tidings arrived of the massacre. A troop of the 19th Dragoons was at the time ready for parade. Gillespie ordered them to get ready for the rescue of their countrymen. The 16 miles were soon covered; Gillespie had outstripped his escort, and was attracted by the sound of musketry to a lofty gateway and bastion, where the remnant of the British still stood at bay, their last cartridge almost expended, when Sergeant Brodie, who had known Gillespie at St. Domingo, saw a horseman spurring across the plain, and, turning round to his comrades, said, 'If Colonel Gillespie be alive, here he is at the head of the 19th Dragoons; and God Almighty has sent him from the West Indies to save our lives in the East!' A rope, made of soldiers' belts knotted together, was let down the ramparts, and Gillespie dragged up amidst a shower of balls. The dragoons with their galloper guns (light field pieces used by cavalry regiments in those days) blew open the gates; a British 'huzza' was heard, accompanied by the rattling of horses' footsteps over the drawbridge, and the mutineers were charged. Some 300 or 400 were cut to pieces, many were taken prisoners, and others escaped by dropping from the walls. Fancourt only lived to see the ensign of Mysore cut down, and the British standard once more float on the ramparts of Vellore. He died that afternoon, having been shot down by some sepoys when trying to join Brodie's main guard. Lady Fancourt and her two children escaped, through the faithfulness of their servants and the timely arrival of Gillespie. The members of Tipu's family who were the chief instigators of the mutiny, were removed to Calcutta. Colonel Gillespie next went through active service in the subjugation of the Spice Islands. The last scene in which he acted was the Gurkha war. He was shot through the heart on the 31st October 1814, while waving his hat and leading his men on to the first fortified position he met at Kalunga, in Nepal.

GILOLO is one of the Molucca Islands. Its north end is in about lat. 2° 23′ N. It has a long mountainous coast, high bold land, with three remarkable peaks. The indigenes live in the north of the island. Their stature, their features, as well as their dispositions and habits, are almost the same as those of the Papuan. Their hair is semi-Papuan, always crisp, waved, and rough, such as often occurs among the true Papuans but never among the Malays. Their colour alone is often exactly that of the Malay, or even lighter. In most cases, the large, somewhat aquiline nose, with elongated apex, the tall stature, the waved hair, bearded face and hairy body, as well as the less reserved manner and louder voice, unmistakingly proclaim the Papuan type. Here is the exact boundary between the Malay and Papuan race. It is only in the Northern Peninsula that these Papuan indigenes exist, the whole of the rest of the island, with Batchian and the other islands westward, being exclusively inhabited by Malay tribes like those of Ternate and Tidore. The Galela race are natives of a district in the extreme north of Gilolo, but they are great wanderers over the Archipelago. They are a very fine race, remarkably energetic and industrious, of light complexion, tall, and with Papuan features, coming near to the drawings and descriptions of the true Polynesians of Tahiti and Owyhee. They build large and roomy prahu with outriggers, and settle on any coast or island they take a fancy for.

They catch turtle and trepang, hunt deer and wild pigs and dry the meat, and cut down the forest and plant rice or maize. Pitta gigas, a large ground thrush of Gilolo, is one of the most beautiful birds of the East. Its plumage is a velvety black above, breast of pure white, shoulders of azure blue, and belly of vivid crimson. Charmosyna placentis of Gilolo is one of the smallest and most beautiful of the brush-tongued lories. Coetia d'Urvillei, a rare and beautiful day-flying moth.—*Horsburgh; Bikmore; Wallace*, ii. pp. 2, 3.

GINDAR. HIND. An insect that destroys growing grain and pulses.

GINDING, a land wind in East Java, occasioned by the S.E. monsoon blowing right over the land through the gap at Klakka, 1000 feet above the sea, between the Jyang and Tengger mountains, 8000 and 9000 feet high.

GINGEE, Ginji, or Ghinji, in the S. Arcot district, in lat. 12° 15′ 19″ N., and long. 79° 26′ 8″ E., a town and fort 35 miles N.W. of Pondicherry. In the contests between the rival French and British, and rival Mahratta and Mahomedan princes, Gingee and neighbourhood were frequently scenes of strife, but it long continued a French possession. In the 17th and 18th century it was taken by Sivaji, was attacked by Aurangzeb, stormed by the French, but finally occupied by the British. The French obtained the grant of Pondicherry in 1674, from a raja of Gingee, who acknowledged the king of Narsinga as his superior; but this latter was at the same time dependent on Visiapor. Sivaji took possession of Gingee about the year 1677, and confirmed the above grant in 1680.—*Rennell's Memoir.*

GINGELLY OIL, Sesamum Oil.

Jiritch, ... ARAB.	Nall-ennai, . . . TAM.
Mitha til-ka-tel, . HIND.	Manchi-numa, . . TEL.
Kurit, Schuk, . . PERS.	

Gingelly Seed, Sesamum Seed.

Sumsum, . . . ARAB.	Taila, ... SANSK.
Ella, ... CAN.	Yellu, ... TAM.
Til, Jingelly, GUJ., HIND.	Nuwulu, ... TEL.
Kunjed, . . . PERS.	

Gingelly is the commercial name for the Sesamum orientale. Three varieties of the plant are cultivated in India,—the white-seeded (Saffed-til), the red or parti-coloured (Kala-til), and the black variety (Tillee). It is the last which affords the greater proportion of the gingelly oil of commerce. A sort of sesame oil, sometimes called rape, is obtained from the red-seeded variety. Black sesame is sown in March, and ripens in May. Red sesame is not sown till June. The black-seeded variety (Tillee) affords a larger percentage of oil than the red-seeded kind. It is extensively cultivated in Southern Asia for the oil expressed from the seeds, which are slightly oval, small, tasteless, and inodorous. The varieties of seed possess the same properties, and in commerce are met with both in a mixed and separate state. Gingelly seed is largely exported to England and France, and the oil is perhaps consumed to a greater extent than any other by the natives of India, and is second only to cocoanut oil in its importance as an article of commerce. The great disparity of colours observed in this oil is attributed to the mode of preparation. The method sometimes adopted is that of throwing the fresh seeds, without any cleansing process, into the common mill, and expressing in the usual way. The oil thus becomes mixed with a large portion of the colouring matter of the epidermis of the seed, and is neither so pleasant to the eye, nor so agreeable to the taste, as that obtained by first repeatedly washing the seeds in cold water, or by boiling them for a short time, until the whole of the reddish-brown colouring matter is removed, and the seeds have become perfectly white. They are then dried in the sun, and the oil expressed as usual. This process yields 40 to 44 per cent. of a very pale straw-coloured sweet-smelling oil, an excellent substitute for olive oil. In India the oil is chiefly used in cookery, in anointing the person, for making soap, and for burning in lamps. In England it is chiefly used for the manufacture of soap, and for burning in table-lamps, for which it is better suited than cocoanut oil, owing to the lower temperature at which it congeals. In different parts of the Madras Presidency the price of this oil varies from Rs. 1·5 to Rs. 6 per maund of 25 lbs. Til or gingelly seed exported from India, chiefly to France, and from Bengal and Bombay:—

	Cwt.	Rs.		Cwt.	Rs.
1874-75,	1,203,222	72,28,920	1877-78,	1,158,802	84,82,262
1875-76,	1,209,908	75,54,782	1878-79,	1,039,687	79,96,210
1876-77,	1,367,81	86,82,937	1879-80,	1,680,185	1,19,79,042

GINGER, Zingiber officinale.

Zangebil, . ARAB., PERS.	Zenzero, ... IT.
Jaheth, ... BALI.	Jasinking, also Jait, JAV.
Ada (green). . . . BENG.	Sapadas, also Alya, MALAY.
Khyeng khyuk (gr.), BUR.	Inchiver, . . MALEAL.
Khyeng-dsein (dry), ,,	Gengivre, . . . PORT.
Sunty, . . . CAN.	Inbir, ... RUS.
Kan-kiang, Peh-kiang, CH.	Sunthi, Sringavera, SANSK.
Gember, ... DUT.	Ingluru, . . . SINGH.
Gingembre, . . . FR.	Jengibre, Agenjibre, SP.
Ingwer, ... GER.	Inji (green), Shukku, TAM.
Adrak (green), . . HIND.	Shonti, ... TEL.
Sont (dry), . . . ,,	Zenjefil, ... TURK.

Dr. Royle thinks that the Sanskrit name Sringavera is the source of many of its names.

The ginger plant is cultivated in the tropical regions of Asia, America, and Africa. In India it is generally cultivated in gardens, being sown about the commencement of the rains, in beds of about six feet square, and in a rich soil. The planting consists in dividing part of the green root, which the natives first soak in a mixture of cow-dung and water; it is then planted about two inches deep and about one foot apart. It requires a great deal of water, and to be kept clear of weeds. When the stalks dry, the ginger may be taken up, although it is sometimes left in the ground for one or two years. It is better for remaining twelve months, and must be watered during the dry season. The stem reaches generally three or four feet in height, and is renewed yearly; while the root, which is the part known as ginger, botanically termed a rhizome, is biennial. In Jamaica the roots are dug up in January or February when about a year old, and after the stems are withered. They are well washed, freed from dirt, and in some cases, especially with the better kinds, the epidermis or outer coat is stripped off; and hence the division of ginger into white, scraped, or uncoated, and into black, unscraped, or coated. In estimating the quality of ginger, a variety of particulars are taken into consideration, as whether the rhizomes are coated or uncoated, their form, colour, and consistence.

Out of 21 samples of the gingers sold in London, 15 were found by Dr. Hassall to be

adulterated with sago meal, potato flour, wheat flour, ground rice, cayenne pepper, mustard husks, and turmeric powder in various quantities, but in the majority of cases constituting the principal part of the article. A great part of that found in the shops had been washed in whiting and water, under the pretence of preserving it from insects. The dark-coloured kinds are frequently bleached with chloride of lime.

Great Britain imported 33,854 cwts. in 1870, and 32,000 cwts. in 1871. Ginger exported from India—

	Lbs.	Rs.		Lbs.	Rs.
1875-76,	6,333,327	10,09,398	1878-79,	9,190,945	13,05,246
1876-77,	6,427,656	8,61,534	1879-80,	6,960,006	9,94,149
1877-78,	4,647,404	6,93,941			

The Malabar ginger exported from Calicut is the produce of the district of Shernaad, situated in the south of Calicut, a place chiefly inhabited by Moplas, who look upon the ginger cultivation as a most valuable and profitable trade. The soil of Shernaad is so very luxuriant, and so well suited for the cultivation of ginger, that it is reckoned the only place in Malabar where the plant grows and thrives to perfection. The only suitable kind of soil is that which, being red earth, is yet free from gravel, and the soil good and heavy. The cultivation generally commences about the middle of May, after the ground has undergone a thorough process of ploughing, harrowing, etc. At the commencement of the monsoon, beds of ten or twelve feet long by three or four feet wide are formed, and in these beds small holes are dug at three-fourths to one foot apart, which are filled with manure. The roots, hitherto carefully buried under sheds, are dug out, the good ones picked from those which are affected by the moisture, or any other concomitant of a half-year's exclusion from the atmosphere, and the process of clipping them into suitable sizes, for planting performed, by cutting the ginger into pieces of an inch and a half to two inches long. These are then buried in the holes, which have been previously manured, and the whole of the beds are then covered with a good thick layer of green leaves, which, whilst they serve as manure, also contribute to keep the beds from unnecessary dampness, which might otherwise be occasioned by the heavy falls of rain during the months of June and July. Rain is essentially requisite for the growth of the ginger; it is also, however, necessary that the beds be constantly kept from inundation, which, if not carefully attended to, entirely ruin the crop. Great precaution is therefore taken in forming drains between the beds, and letting water out, thus preventing a superfluity. On account of the great tendency some kinds of leaves have to breed worms and insects, strict care is observed in the selection, and none but the particular kinds used in manuring ginger are taken in, lest the wrong ones might fetch in worms, which, if once in the beds, no remedy can be resorted to successfully to destroy them, and thus in a very short time they ruin the crop. Worms bred from the leaves laid on the soil, though highly destructive, are not so pernicious to ginger cultivation as those which proceed from the effect of the soil. The former kind, whilst they destroy the beds in which they once appear, do not spread themselves to the other beds, be they ever so close; but the latter kind must of course be found in almost all the beds, as they do not proceed from accidental causes, but from the nature of the soil. In cases like these the whole crop is oftentimes ruined, The present mode of preparing the land for this crop in the West Indies, is by first carefully hoeing off all bushes and weeds from the piece intended to plant; the workmen are then placed in a line, and dig forward the land to the full depth of the hoe, cutting the furrow not more than from five to six inches thick. The land is then allowed to pulverize for a short time; it is then prepared for receiving the plants, by opening drills with the hoe, from ten to twelve inches apart, and the same in depth, chopping or breaking up any clods that may be in the land. Two or three women follow and drop the plants in the drills, say from nine to ten inches apart. The plants or sets are the small knots or fingers broken off the original root, as not worth the scraping. The plants are then covered in with a portion of the earth-bank formed in drilling. Great care and attention is required to keep them clean from weeds until they attain sufficient age. They throw out a pedicle or footstalk in the course of the second or third week, the leaves of which are of similar shape to that of the Guinea grass.

Ginger is very liable to rot, particularly if planted in too rich a soil, or where it may be subject to heavy rains. The general average of yield is from 1500 to 2000 lbs. per acre in plants, although as much as 3000 lbs. of ginger have been cured from one acre.

Ginger Preserve is made from the young shoots put forth every spring by the perennial rhizome. These shoots are carefully picked, washed, scalded, scraped, peeled, and then preserved in jars with syrup. Dried ginger of good quality, soft and mealy, may be converted into excellent preserved ginger. The rhizomes, selected with care, are to be immersed for three or four weeks in very weak syrup, scarcely stronger than sugar and water, to which a small portion of the carbonate of potash has been added. As soon as the ginger has become sufficiently soft, it is put up in very strong syrup of white sugar. Ginger preserve is imported into India solely from China, in cases containing half-a-dozen of jars each, the capacity of each jar being about 5 lbs. —*Dr. P. Browne; Poole's St. of Commerce; Mason's Tenn.; Hassall's Food; Riddell's Gardening; M'C. Dict.; Faulkner's Dict.; Simmonds.*

GINGERBREAD TREE, or Doom palm of Egypt, is the Hyphæne Thebaica (Cucifera Thebaica), and receives its name from its fruit having the look and taste of gingerbread. It is stated by Dr. Lindley to produce the bdellium. Its wood is used for various domestic purposes, and its kernels turned into rosaries.—*Seeman.*

GIN-RIKSHA. Jap. Literally, man-power carriage, a small two-wheeled conveyance, dragged by two or more coolies.

GINSENG. Anglo-Chin. The famed ginseng substances are known to the Chinese as Jin-san, Liau-san, Hwang-san, Shin-tsan, Kwan-tang-jin-san, and Kwan-si-jin-san. The Dutch call it Kraft Wurzel, and the Tartars, Ohrota. That obtained in the provinces of Shen-si, Peh-chih-li, and Shing-king is the product of the Panax ginseng, *Meyer.* A part of this drug is obtained from the Nepal plant, Panax pseudo-ginseng, *Wallich*, and the P. quinquefolium,

which is largely used in Central China, is the American ginseng. The Shing-king plant, called Kwan-tung-jin-san, is almost an imperial monopoly. A plant called Tang-san, which seems to be cultivated in Corea or Peh-chih-li, and substituted for the true ginseng, seems to be a species of Campanula or Adenophora. Corean ginseng ranks next after the Kwan-tung-jin-san of Manchuria,—in fact, constitutes the only available drug in the hands of traders. This, however, is often adulterated with Japanese ginseng, which again is often adulterated with roots of Campanula glauca, etc. The Manchuria wild ginseng is carefully searched for by the Manchu. The pieces, after careful trimming with a bamboo knife, and drying in still air, are made to assume something of the form of the human body or miniature human hand. They are yellowish, semi-transparent, firm, brittle to some extent, and of a sweet mucilaginous taste, inclining to bitterness. It is easily injured by damp and worms, and great care is taken to preserve the true Manchurian plant. It is prepared as an extract or as a decoction, and always in silver vessels. It is prescribed in almost every kind of disease of a severe character, but the stage of each disease in which it is administered is carefully distinguished. It is given in all forms of debility, spermatorrhœa, asthma, hemorrhages, severe dyspepsia, vomiting of pregnant women, chronic malarious affections, and the typhoid stages of epidemic fever; and its effects apparently are of an alterative, tonic, stimulant, carminative, and demulcent nature. Dr. Smith observes that some positive efficacy of a sustaining character does really exist in this species of ivywort. The leaves are sold in bundles, and are said to be emetic and expectorant.

The ginseng that comes to Shang-hai, chiefly from Corea and Tartary, is carefully protected from the air, and sells at from 6 dollars to 300 and even 400 dollars the ounce.

Ginseng, Bastard, Shang-tung-jin-san, CHIN., Tang-san, CHIN., is obtained from the roots of several species of Adenophora, Campanula, Phyteuma, and Platycodon, which are largely used to adulterate and as substitutes for the genuine ginseng; but the Japanese seem to prize the roots of Campanula glauca as highly as the true ginseng. Also the virtues of the true ginseng are exhausted, and the now worthless root re-sold. Plants of Shan-si and other Chinese provinces, called by the Chinese Tang-san, also Fang-tang-san, also Lu-tang, also Ch'uen-tang, and Ming-tang, are often substituted for ginseng.

Ginseng, Black.

Heh-san; Hiuen-san, CHIN. | Yuen-san, . . CHIN.

This Chinese plant is grown in Ho-chau (Nganhwui), and in the N. and N.W. provinces of China. Its black fleshy roots have some resemblance to ginseng; taste raw and sweetish, with little odour, though used by incense-makers.

Ginseng, Extract of, Jin-san-kau, CHIN., is carefully prepared in silver vessels. It is used to make the Tsai-tsau-hwan, or regenerating pills, sold at two taels a-piece in Hankow.—*Smith; Williams' Middle Kingdom*, p. 284; *Sim. Com. Pro.* 436–37; *Hon. Mr. Morrison's Comp. Des.*; *Lockhart*, 109.

GIRAFFA CAMELOPARDALIS. *Sundev.*

Var. *a.*

Cervus camelop., *Linn.* | Giraffa camelop., *Bresson.*
C. Capensis, *Geoff.*, *Ogilby.* | Camelop. giraffa, *Gmelin.*

Var. *b.* Pale colour.

Camelop. girafa, var. *β.* Æthiopica, *Sunde.* | C. Senaarensis, *Geoff.* C. Æthiopicus, *Ogilby.*

Kamel paard, . . DUT. | Camelopard, . . ENG.

The giraffe, one of the Ruminantiæ, has persistent horns in both sexes; the horns are covered with a hairy skin, with a tuft of hair at the tip. Lip not grooved, entirely covered with hair, much produced before the nostril; tongue very extensive; neck very long, body short; hinder legs short, false hoof none; tail elongate, with a tuft of thick hair at the end.—*Eng. Cyc.*

GIRAH. HIND. A knot, a division of a gaz. Sal-girah, the knot made annually on a birthday.

GIRAR, 36 miles S.E. of Wardah district, is famed for the shrine of Shaikh Khaja Farid. It is on the top of the hill close by, and attracts a continual flow of devotees, Hindu as well as Musalman. He was born in Hindustan, and, after wandering about for some thirty years as a fakir he came and settled on the Girar hill about the year A.D. 1244. There is a belief that the zeolites on the Girar Hills are petrified cocoanuts and other articles of merchandise belonging to two travelling traders, who mocked the saint, on which he turned their whole stock-in-trade into stones as a punishment.

GIRARDINIA LESCHENAULTIANA.

Urtica heterophylla, *Roxb.*

Neilgherry nettle, . ENG. | Ana shorigenam, MALEAL.

Grows in the Konkans, the Peninsula, Nepal, and is frequent all over the higher range of the Neilgherries. The bark yields a fine, strong, white, flax-like fibre, which the hill people obtain by plunging the plant into hot water, to deprive it of its virulently stinging properties, and then peeling the stalks. The textile material so prepared is of great strength, and the Todawar use it as thread. It is worth £200 a ton in England.—*M. E. J. R.*

GIRASI, a predatory, piratical race on the Mahratta coast, qu. Grassia.

GIRBAR. In Oman, the hides of the sheep or goats are made into leather vessels, called Girbar Those of kids or lambs serve for milk, while the larger are used for either wine or water. They are tanned with the bark of the acacia; and the hairy part, which is left without, is generally, though not invariably, cleansed. The apertures through which the legs protruded are closed up, and the fluid within is discharged through the opening of the neck, which is gathered together and fastened by means of a leathern thong, its extremity being cut in the form of a tongue or spout. They are slung alongside their camels; and a Bedouin, when thirsty, may frequently be observed drinking from them whilst in that position. They answer better than jars, because, if the camel run against trees or its fellow-beasts in the caravan, they are not liable to be broken, and from the evaporation constantly going on, the water is also kept cool; but whilst new, sufficient attention is not paid to cleansing them, and their contents thus acquire a loathsome taste and smell.—*Wellsted, Tr.* i. 89.

GIRDAWUREE, also written Girdawari. Patrolling, inspecting, going the rounds, from the Persian Gird, circuit, circumference, and Aordan, to bring.—*Elliot.*

GIRDHANA, a sacred hill in Vrij, from which Krishna derives one of his principal epithets, Girdhun or Girdhun-nath, 'God of the mount of

wealth.' Here he first gave proofs of miraculous power, and a cave in this hill was the first shrine, on his apotheosis, whence his miracles and oracles were made known to the Yadu race. From this cave (Gopha) is derived another of his titles, Gophnath, 'Lord of the cave,' distinct from his epithet Gopi-nath, 'Lord of the Gopi,' or pastoral nymphs. On the annual festival held at Girdhana, the sacred mount is purified with copious oblations of milk, for which all the cows of the district are in requisition. The worship of Krishna in ancient days, like that of Apollo amongst Greeks, was chiefly celebrated in caves, of which there were many scattered over India. The most remarkable were those of Girdhana in Vrij, Gaya in Bahar, Gophnath on the shores of Saurashtra, and Jalindra on the Indus.—*Tod*, i. p. 545.

GIRDLES are worn by Mahomedans and Hindus. They are alluded to in the Bible, Psalm cix. 19, 'Let it be unto him as a girdle wherewith he is girded continually;' Daniel x. 5, 'Whose loins were girded with the fine gold of Uphaz.' Many of the Hindus, both men and women, wear a silver or gold chain round their loins; and all Mahomedans in full dress wear a muslin girdle, called a kamrband or loin-girdle: Psalm xciii. 1, 'Strength wherewith he hath girded himself.' When an Asiatic is about to set off on a journey, to lift a burden, or to do something which requires exertion, he binds firmly his loose upper garment round his loins.

GIRI, Pabur, and Tons rivers are tributaries of the Jumna, and up the valley of the Giri to Kotkai there is a great consumption of wood and charcoal in connection with the iron-smelting, for which that locality is famous.—*Cleg. Panj. Rep.*

GIRNAR, in lat. 21° 30′ N., long. 70° 42′ E., a hill 3500 feet high, near Junagarh in Kattyawar, and 40 miles to the north of Somnath. The Jaina religionists regard it as sacred, only second in importance to Palitana, and it is also reverenced by Hindus. Of the holy objects on and near it may be mentioned, a rock at the foot of the hill outside the town, and which is covered with a set of Asoka's inscriptions, 250 B.C. Another inscription (150 A.D.) relates how the local ruler, Rudra Dama, defeated the king of the Dekhan; while a third (457 A.D.) records the bursting of the embankment of the Sudarsana tank, and the rebuilding of a bridge which was destroyed by the flood. The principal group of temples at Girnar is situated on a ledge, about 600 feet from the summit, and nearly 3000 feet above the level of the sea. The largest, and possibly the oldest of these, is that of Neminath. About 2700 feet above the sea, and 2500 above Junagarh, are a series of Jain temples on a ledge of the mountain. In a small underground chamber is the Jaina statue of Amijhara, or perspiring idol. The meaning of this is unknown, but it is supposed to be Amrit-jhara, or nectar-drop. On the highest peak at Kalika is Amba Mata, the dread mother, the universal mother, called also Sri Mata Ambika. The famous Bhairava J'hap, or death-leap, is near the Jain temples. It is a huge rock that rises on the edge of the ledge, and slightly overhangs the great precipice. The leap has been forbidden, though even now it is occasionally taken. The peak of Gorukha Natha rises about 3500 feet above the sea, and Datatrya peak is almost the same height; it is sacred to Neminath, whose first convert was king Datatri. There are many ascetic devotees, and in the jungles below there were said to be some of the Aghora. The Jain temples on Girnar Hill are very elaborate and beautiful, much in the usual style of Hindu architecture. The most striking characteristics of their interiors are their fine tesselated marble pavements, their painted domes, their exquisitely shaped and carved pillars,—sometimes of granite and green syenite, — their antique porticoes, beautiful small sculptures and colossal statues. The central dome of the temple to Neminath is curiously painted, and surrounded by female figures. It has beautiful marble pillars composed of alternate black and white marble.

GIRONNIERA RETICULATA, *Thw.*, Koditani, TAM., a large and valuable timber tree found in the Peninsula in the ghat forests, up to 3000 feet elevation, from S. Canara down to Travancore and Tinnevelly, also in Ceylon. The wood is very hard and heavy, and is a valuable engineering timber.—*Beddome, Fl. Sylv.* p. 313.

GIRWA, Girui, Girwi, or Gerwa. HIND. A grain blight of N. India and the Mahratta country, which occurs from late heavy rains and east winds. It is a red fungus which covers the leaves, and, when it adheres to the stems, thrusts its roots through the pores of the epidermis, and robs the grain of the sap as it ascends. It turns the crop of a brick-dust colour.

GISEKIA PHARNACIOIDES. *L. R.*

Et-cilla pala, . . SINGH.	Esukadanti kura, . TEL.
Manall kire, . . TAM.	Isaka dasari kura, . ,,

A plant of N. Africa and Asia, has been recommended for tapeworm. The leaves are used by the natives in the preparation of dholl. Wight in Icones gives also G. molluginoides and G. rubella. —*Jaffrey.*

GISKORI, a Baluch tribe in the Dehra Ghazi Khan district.—*MacGregor, N. W. F.* p. 534.

GITA. SANSK. A song, a hymn. Of these, the most celebrated is the Gita Govinda, an erotic poem by Jaya Deva. It sings the loves of Krishna with Radha and other of the cowherd girls. A mystical interpretation has been put upon it. Sir William Jones and Mr. Edwin Arnold made some translations of it; and Lassen published an edition with a Latin translation. Others are the Gita Girisha, Gita Shankara, Gita Gaurisha, Raga Mala, Sangita Ratnakara, Gana Vidya, Sangita Darpana, and Sangita Rahasya.—*Ward*, iv. p. 409. See Geeta.

GIVOTTIA ROTTLERIFORMIS. *Griff., W. Ic.*

Putalli maram, . . TAM.	Tella, ... TEL.
Butalli, Vendalli, . ,,	Tella poonkee, . . ,,

A very common, middling-sized tree in S. India, one of the Euphorbiaceæ, found in Ceylon, the Circar Hills, and in a very few of the Bombay jungles inland above the ghats. Seed yields an oil valuable for fine machinery. The wood is light, and is used only for making the figures, toys, and models manufactured at Gokak, in the Southern Mahratta country. — *Drs. Wight, Gibson; Beddome; Thw. Zeyl.* p. 278.

GLACIERS are masses of ice which are formed and remain in the valleys and on the slopes of lofty mountains. In every part of the Himalaya and of Western Tibet, wherever the mountains attain a sufficient elevation to be covered with perpetual snow, glaciers are to be found. In the lofty chain of the Cis and Trans Sutlej Himalaya, and of the Kouen Lun, whose peaks rise to a very great height,

and collect in winter enormous depths of snow, the glaciers are of great length. In the central parts of Tibet, which are often lower, and even in their loftiest parts are less snowy than the bounding chains, the glaciers are of inferior dimensions. Where the snow-bed is at once cut off abruptly in an ice cliff, which can hardly be said to be in motion, or rather whose motion must be almost entirely from above downwards, moraines, which on the larger glaciers and among mountains of easily decaying rocks are of astonishing dimensions, form the margins of each glacier, and also occur longitudinally on different parts of their surface, increasing in number as the glacier advances, till at last the several series, whose origin can long be traced to the different ramifications of the glacier, become blended into one. *En route* to Kara-korum, after leaving the Nubra valley, when a sufficient elevation above his encampment had been gained, Dr. Thomson obtained a commanding view of the glacier which occupied the continuation of the main valley. It was nearly straight, and he guessed at least five or six miles long. The inclination of its surface was considerable. On each side, two or three lateral glaciers, descending from the mountains by which it was enclosed, contributed to increase its size, all loaded with heaps of stones, which had at the lower end of the central glacier so accumulated as completely to cover its whole surface. One day he proceeded along the end of the small plain close to which he had been encamped. On the right hand was an ancient moraine, which prevented him from seeing the road in advance. At the upper end of the plain he found a small streamlet running parallel to the moraine; and about a mile from camp reached the end of a small glacier, from which the streamlet had its origin. Crossing the latter, which was still partially frozen, he ascended in a deep hollow between the left side of the glacier and the moraine. The icy mass had not yet begun to thaw, the temperature being still below freezing. After half a mile he ascended on the surface of the ice, and as soon as he did so, was enabled to see that the glacier had its origin in a ravine on the south, and entered the main valley almost opposite to him. The great body of the ice took a westerly direction, forming the glacier along which he had been travelling; but a portion formed a cliff to the eastward, which dipped abruptly into a small, apparently deep lake. At the distance of perhaps 500 yards there was another glacier, which descended from a valley in the northern range of mountains, and, like the one on which he stood, presented a perpendicular wall to the little lake. Right and left of the lake were enormous piles of boulders, occupying the interval between its margin and the mountains, or rather filling up a portion of the space which it would otherwise have occupied. Into this very singular hollow he descended, on a steep icy slope, and, passing along the northern margin of the lake, ascended on the glacier beyond, as before, between the ice, and, on reaching the surface of the second glacier, he found that a similar but smaller depression lay beyond it to the east, in which also there was a small lake, with another mass of ice beyond it. This third glacier also came from the north, and was a much more formidable mass than those which had already been crossed. It was very steep, and was covered with snow, which was beginning to thaw more than was convenient. When at the highest part, he found that though apparently nearly level, it sloped downwards sensibly though very slightly, for nearly half a mile in an easterly direction. It was evident to him that he had now reached the highest part of the ascent, which he assumed to be 17,600 feet, and that the crest of the pass was covered by this glacier.

The existence of glaciers in Western Tibet was first made known by Vigne, who alludes to them in his Travels in Kashmir, ii. p. 285. Colonel Richard Strachey was the first who proved their existence, in 1847, in the Himalaya. On the northern side of the Kara-korum and in the Kouen Lun there are glaciers having forms identical with those of the Alps. Some of them are considerably larger than the glaciers in Europe. In the Himalaya the lowest glaciers go down to 10,500 feet,—the Pindari ending at 11,492 feet, the Timtunna at 11,430 feet, the Tsoji at 10,967 feet, and the Chaia at 10,520 feet. In Western Tibet they descend to about the same elevation; thus the Mustagh to 11,576 feet, the Tap 11,508 feet, the Tami Chuet 10,460 feet, the Bepho glacier near Askoli, even to 9876 feet. The latter is worthy of notice as a remarkable case of low termination. In the Kouen Lun the glaciers end probably at heights not much differing from those in Western Tibet; at least, so may be inferred from the height of the snow limit, as also from the general appearance of the upper part of the glaciers. The glaciers on both flanks of the Elchi pass present, however, no instances of particularly deep descent.

Dr. Hooker could not discover any in the more eastern valleys, even so low as 14,000 feet, though at the hot season extensive snow-beds remain unmelted at but little above 10,000 feet. The foot of the stupendous glacier filling the broad head of the Thlook is certainly not below 14,000 feet, though, being continuous with the perpetual snow (or névé) of the summit of Kinchinjingow, it must have 14,000 feet of ice in perpendicular height, to urge it forwards. Dr. Hooker made frequent excursions to the great glacier of Kinchinjingow. Its valley is about four miles long, broad and flat. Chango-khang rears its blue and white cliffs 4500 feet above its west flank, and throws down avalanches of stones and snow into the valley. Hot springs burst from the ground near some granite rocks on its floor, about 16,000 feet above the sea, and only a mile below the glacier, and the water collects in pools; its temperature is 110°, and in places 116°, or 4° hotter than that of the Yeum-tong hot springs, though 4000 feet higher, and of precisely the same character. A Barbarea and some other plants make the neighbourhood of the hot springs a little oasis; and the large marmot is common, uttering its sharp, chirping squeak. Dr. Hooker (ii. p. 7) found the moraines in the Sikkim valleys at 7000 or 8000 feet elevation. This would show either that the climate has changed, or that the mountain mass has become depressed equal to 8000 feet since the formation of the moraines.

In the Western Himalaya, in the Mustagh range, are two glaciers immediately adjoining one another, possessing a united length of 65 miles. Another in their neighbourhood is 21 miles long and from 1 to 2 miles wide. Its upper portion is 24,000 feet

above the sea-level, and its lower portion terminates in masses of ice 250 feet in height and 3 miles in breadth, and is 16,000 feet above the sea. Glaciers are called Gal by the Bhotia.

There is a glacier in the valley of Brabaldo, in Little Tibet, a short distance from the village of Arindo. Its width is about 450 yards, and nearly a hundred feet high, and a large river flows with velocity from below it.

In 1839, Major A. Cunningham traversed a magnificent glacier which spanned the valley of the Cheli river, below the Kali Debi pass (16,700 feet). It was fissured in all directions, and, looking down the main fissure, which was five feet wide, he saw the stream trickling at a depth of more than 300 feet. The surface was covered with hardened snow and embedded stones; but the mass, as seen in the fissures, was clear, transparent ice, filled with white specks. This glacier was about a mile long and a quarter of a mile broad, with an average depth of 200 or 300 feet. In the same range, Dr. Thomson saw a similar glacier to the north of the Saj pass, about 30 miles to the north-west of Kali Debi. In 1847, Major Cunningham crossed a second and larger glacier to the north of the Parang pass, at 18,500 feet. It extended down the head of the Para river for 2¾ miles. At its termination it was 50 feet high, but a quarter of a mile upward it was fully 150 feet thick.

Dr. Thomson observed a larger glacier on the northern side of the Umasi La, on crossing into Zangskar. It extended from the top of the pass, 18,123 feet, down to a level of 14,500 feet, and was not less than three or four miles in length. In two different parts of the Shayok, above and below Sassar, seen by Dr. Thomson in 1848, the bed of the stream is completely spanned by enormous glaciers. The great glacier is about 30 miles below Sassar, and 20 miles above the junction of the Changchen-mo. Lieut.-Colonel Alexander Cunningham (Ladakh, p. 94), describing the Shayok or Khundan river, a tributary of the Indus, which rises in the Kara-korum mountains to the northward of Leh, in lat. 35° N., and long. 78° E., tells us that in these cold and lofty regions almost every ravine is filled with a glacier; that since 1826 the channel of this river had never been clear, and the accumulated waters had formed a lake of considerable size, called Nubra-tsho. This barrier has burst on three recent occasions,—in 1826, 1833, and 1841. In that of 1841, when the rushing waters reached Torbela, on the Indus, the river came down furiously in an absolute wall of mud, a horrible mess of foul water, carcases of soldiers, peasants, war-steeds, camels, prostitutes, tents, mules, asses, trees, and household furniture, in one flood of ruin, for Syam Singh Atariwala, of raja Gulab Singh's army, was encamped in the bed of the Indus at Kulaithree Coss, above Torbela, in check of Painda Khan, and but that part of the troops were then in hot pursuit, the destruction would have been greater. Only those escaped who took at once to the mountain-side. Throughout the mountain course of the Indus, fields, houses, and trees were swept away, but man and the animals which he had domesticated generally managed to escape. The waters of the Indus below the junctions of the Shayok, rose to a height of 60 feet, and to 30 feet at Skardo.

Chorkonda, a glacier in Balti, in Tibet, is in lat. 35° 36′ N., and long. 75° 58′ E., and 16,900 feet above the sea.

Ibi-Gamin, a glacier in Eastern Tibet, in height 22,260 feet English = 20,886 French feet.

Captain Godwin-Austen, 24th Regiment, writing in 1863 on the glacier phenomena of the valley of the Upper Indus, notices the glaciers in that part of the great Himalayan chain which separates Tibet from Yarkand, in lat. 35° to 36° N., and long. 76° E., and extending over an area about 100 miles from east to west, from Kara-korum peak No. 2 (28,265 feet), to the mountain of Haramosh. Glaciers supply the Hushe river, which joins the Indus opposite Kapelu. Those of the upper portion of the valley take their rise on the southern side of the peak of Masherbrum, and are about 10 miles in length.

The great Baltoro glacier takes its rise on the west of Mausherbrum peak; on the north it is joined by a great ice-feeder, which comes down from peak No. 2; opposite to it, from the south, is another. Both of these extend 9 or 10 miles on either side of the main glacier. This, from its rise to its further end, measures 30 miles; its course is from E. to W.; the breadth of the valley along which it flows is 12 miles. It receives numerous tributaries along its course, some of which are 10 miles and more in length; two of them on the N. lead up to the Mustagh pass into Yarkand (18,000 feet), whence a glacier descends to the N.E. about 20 miles in length.

The Nobundi Sobundi glacier takes its rise from a broad ice-field which lies to the N. of lat. 36°, and has a S.E. course for 14 miles, with numerous laterals; it then turns S., when it bears the name of the Punmah glacier; about 5 miles from the termination it is joined by a glacier from the N.W., 15 miles in length.

The Biafo glacier is perhaps the most remarkable of any of this part of the Himalayan range; it has a linear course of upwards of 40 miles; the opposite sides of the valley are very parallel along its whole length, and the breadth of ice seldom exceeds a mile, except where the great feeders join it from the N.E. From the summit-level of the Biafo Gause a glacier is continued westward to Hisper in Nagayr, 28 to 30 miles in length.

The Chogo, which terminates at Arundu, takes its rise between the mountain of Haramosh and the Nushik pass; it is about 24 miles in length, with numerous branches from Haramosh, 8 miles in length.

The waters from all the glaciers, from that of Baltoro in the E. to Chogo in the W., are collected into the Shigar river, which joins the Indus at Skardo. All these glaciers carry great quantities of rock-detritus. The blocks on the Punmah glacier are of great size. There are groovings and old moraines of a former extension of the glaciers in this region, showing that they have at times reached many miles beyond their present termination, and have risen upwards of 400 feet above their present levels. There are thick alluvial accumulations of the valley of the Indus, particularly in the neighbourhood of Skardo.

The glaciers and peaks of the Sassar pass in Nubra, Tibet, are shown by the brothers Schlagentweit to be in lat. 35° to 36° N., and long. 77° 27′ 35″ E., and 17,753 feet above the sea. Colonel Markham, describing the glacier from beneath which the

Ganges issues, says: 'I beheld it before me in all its savage grandeur, thickly studded with enormous loose rocks and earth. Extensive as my travels since this day have been through these beautiful mountains, and amidst all the splendid scenery I have looked on, I can,' he says, 'recall none so strikingly magnificent as the glacier of the Ganges.'—*Cunning.; Hooker; Thomson; Strachey.*

GLADWIN, FRANCIS, author of a History of Hindostan during the reigns of Jehangir, Shahjehan, and Aurungzebe, Calcutta 1788.

GLAM. —? A tree of Singapore; furnishes paper-like bark, used in caulking the seams of vessels. A similar substance occurs in Borneo, supposed to be the produce of a species of Artocarpus.—*Royle, Fib. Pl.* p. 341.

GLAPHYRIA, a genus of small trees belonging to the natural order Myrtaceæ. G. nitida is called by the Malays the tree of long life, probably from its maintaining itself at elevations where the other denizens of the forest have ceased to exist. It affords, at Bencoolen, a substitute for tea, and is known by the name of the tea-plant. Various species of Leptospermum and Melalena bear the same name in the Australian colonies. G. sericea has lanceolate acuminated leaves. It is a native of Penang and the west coast of Sumatra.—*Eng. Cyc.*

GLASS.

Kizaz, ...	Arab.	Sheeshah, . . .	Pers.
Vitre, Verre, . . .	Fr.	Steklo, ...	Rus.
Kanch, ...	Hind.	Vidrio, ...	Sp.
Vetro, ...	It.	Kunnadi, . . .	Tam.
Vitrum, ...	Lat.	Addamoo, . . .	Tel.

Glass imported into India consists of sheet and plate glass, glass beads and false pearls, common bottles, and other ware. Between the years 1874-75 and 1879-80 the value ranged from Rs. 28,07,405 in 1876-77, to Rs. 34,99,313 in 1875-76. The sheet and plate glass was valued at two to four lakhs, and the beads and false pearls at Rs. 6,85,314 to Rs. 9,69,595.

The basis of all glass is silica and alkali, of which the former, in the shape of common sand, is to be met with almost everywhere; the latter is to be had cheaply and in abundance in most parts of India. The secondary materials also, indirectly essential to the manufacture of the best quality of glass, namely the fireclays used in the construction of the furnaces, are abundant, and of very superior descriptions. Yet with all these advantages the natives do not appear to have advanced in the manufacture beyond the first and very rudest stages; and although it is one which, if successfully prosecuted, would probably meet with very extended encouragement, the manufacture of the commonest bottles is not yet practised. The chief defects of the native manufacture are the use of too large a quantity of alkali; in fact, in some cases, it is so much in excess, that it might be tasted by applying the tongue to the article. The fault now remarked upon is probably connected with and caused by another, that of the material being melted at too low a temperature and in too small bulk; and these again probably arise from the use of an improper furnace and an unsuitable kind of fuel. The native furnace is usually a rude hole dug in the ground, coated with ferruginous clay, which tends to discolour the glass, and the heat is raised by the use of bellows blast. Hence the temperature is confined to one point of the mass, and is insufficiently diffused; while the body of metal under fusion being small, and the dome and sides above ground being thin, the heat is dissipated from them, and never attains body and elevation sufficient to admit of the mass setting and purifying itself, or of its being freed from air-bubbles by the addition of the proper proportion of silica. What is required is the preparation of the glass in larger quantities at a time, and with this view larger and more carefully constructed furnaces, on the reverberating principle, to be heated by coal; after this, that the process should be attended to more scrupulously, and the materials mixed by weight, instead of being thrown together by measure, as is too commonly the case at present. Country glass is usually made of dhobi's earth, a crude carbonate of soda, with a mixture of a little potash and lime 60 to 70 parts, and yellowish white sand 30 to 40 parts, composed of small fragments of quartz, felspar, iron, and a trace of lime. In 100 parts, for good bottle glass of Europe, are needed sand 58, sulphate of soda 29, lime 11½, charcoal 1½.

Sulphate of soda only contains 45 per cent. of alkali, so that 29 parts contain 13; while the carbonate of soda obtained from dhobi's earth contains between 30 and 40 per cent. of alkali, according to which the alkali used by the natives of India would be to that employed in Europe in the proportion of 23 to 13.

The substances generally used by the natives in colouring glass are iron, which gives green, brown, and black shades; manganese for pink, purple, and black; copper for blue, green, and deep red; arsenic for white; and chromate of iron for a dull green. Bangles for the wrist are the chief articles now made in India, and some of the colours in the Bombay bazar are exquisite. The Chinese manufactures of porcelain, glass, and glazes, their carving and engraving of gems, Chinese agates, rock-crystals, and ivory, excite the admiration of Europe, as also does the Chinese and Japanese lacquer and varnish work.

The art of glass-making is yet in its extreme infancy in the Panjab. The glass sand occurs in the form of a whitish sand, mixed with an alkali, which effloresces naturally. It is there called reh; that only of a good white colour makes glass. This substance is identical with the alkaline efflorescence which appears in many parts, and whose presence is destructive to cultivation. Wherever such an efflorescence occurs over clean sandy soil, there is naturally formed a mixture of sand and alkali, which fuses into coarse lumps of bottle-green glass.

Glass Beads.

Kanch ke'manke,	Hind.	Munnie, ...	Tam.
Butirsacha, . .	Malay.	Pussalu, ...	Tel.

Coloured glass beads are largely worn in India by several non-Aryan races. Among the curious examples of persistence in art, are the Aggry beads which occur everywhere in Africa, and in many parts of Asia. They are considered to be of Phœnician origin, but are still made for the purpose of being bartered in Africa. They are usually large, not round but spindle-shaped, with alternate indented bands of red and blue, separated by a narrow white line.—*Powell; Hooker; Royle.*

GLAUCUS, a genus of sea lizards. G. hexapterigius, *Cuv.*, occurs in the Indian and S. Pacific

oceans. It is a fragile, delicately-coloured animal, and is about an inch long. Its upper surface is a vivid purple, and its lower is pearly white.—*Ben.* p. 46; *Collingwood.*

GLEDITSCHIA SINENSIS. *Lam.*

Mimosa fera, *Loureiro.*

Tsau-koh, Tsau-kiah, CHIN. | Chu-ya-tsau-kiah, . CHIN.

One of the Leguminosæ met with in China and Cochin-China, with pods 8 to 12 inches long. They contain may flat seeds, and are used in washing the body, also for clothes. Parts of the plant are used medicinally.—*Smith.*

GLENNIEA ZEYLANICA. *Hook. fils.*

Sapindus unijugus, *Thw.* | Nephelium fuscatum, *Gl.*

A large tree growing in Ceylon at Trincomalee, and on the mountains up to 4000 feet elevation. —*Beddome, Fl. Sylv.* p. 133.

GLINUS LITOIDES. *Linn.*

Gandibuti, . . . HIND. | Zakhm-i-haiyat. . PERS.
Porprang, . . . ,, | Kotuk of. . . . SIND.

This plant is given in the Panjab as a purgative in diseases of the abdomen, under the name of Zakhm-i-haiyat, which name, however, is also generally ascribed to Sphæranthus hirtus, also to Cissampelos pareira, and to the creeper Lettsomia.

Glinus trianthemoides, Sharunnay-keeray, TAM., a procumbent herb, with fleshy leaves of a brownish colour, used as spinach; a very abundant and troublesome weed. G. dictamnoides, *Linn.*, is of all India; its tender shoots are eaten in curries.—*Dr. J. L. Stewart; Jaffrey.*

GLOBBA CAREYANA. On shady banks in the Tenasserim Provinces, this pretty orange-flowered globba is not uncommon. Wight in Icones and Roxburgh (i. pp. 80–81) describe several species; and the flowers of G. pendula of Chittagong and G. spathulata of Sylhet are lovely. G. expansa, *Wall.*, is Pa-deing-gnò of the Burmese.

GLOBIOCEPHALUS INDICUS. *Blyth.* The Ca'ing whale is closely affined to the European Gl. deductor, but differs externally in being wholly of a black colour. Its intermaxillaries are shorter; the teeth fewer and larger, numbering six or seven above, seven or eight below on each side. The upper view of the maxillaries differs considerably in contour, being broader and less elongated in the Indian species, and there are other discrepancies which are less marked. The Yellow Sea affords the cowfish, G. Rissii, the round-headed cachalot, which the Japanese capture. Other whales resort to the waters east of Manchuria. Seals have been observed on the coasts of Lian-tung, but nothing is known of their species or habits.—*Beng. As. Socy. Journ.* No. 4, 1852; *Williams' Middle Kingdom.*

GLOCHIDION, a genus of plants belonging to the natural order Euphorbiaceæ. There are several species, shrubs or small trees.

G. lanceolarium, *L.*, Bradleia lanceolaria, a useful timber tree of Assam.

G. Neilgherrense, *W. Ic.*, a good-sized and very common tree on the Neilgherries, at the higher elevations about Ootacamund, in flower in May. The male flowers are yellow, the female greenish; Beddome is not acquainted with the timber.—*Roxb.; Bedd.*

GLOCHIDION VELUTINUM. *W. Ic.*

Phyllanthus velutinus, *Mull.*

Koamil; Kalam of BEAS. | Sama, Ambu, of . RAVI.
Bera, ... CHENAB. | Pundna of . . SUTLEJ.
Golkamila sama, JHELUM.

A small tree not uncommon in the Panjab of S. India and Siwalik tract up to near the Indus. The wood is only used as fuel; the bark is employed for tanning.—*Wight, Ic.; Stewart.*

GLORIOSA SUPERBA. *Linn.*

Curculigo superba, *Willde.*

Ulat-chandal, . . BENG. | Katijan; Kartichey, TAM.
Kariari, ... HIND. | Potti dumpa, . . TEL.
Mendoni, . . MALEAL. | Adavi nabhi, Agni sikha, ,,

This beautiful flowering plant grows wild in the Siwalik range up to near the Jhelum, near Punch, also at Ajmir and the Peninsulas of India and Malacca, and in Ceylon. It blossoms at the commencement of the rains. The large, flame-coloured drooping flowers proceed from the upper part of the stalks. The flowers are of a white, yellow, and orange colour, the petals long and fringed. It lasts about eight days, undergoing various changes during that time. The root, Mulim, also Kariart, is a strong poison. Loudon says, 'On account of the glorious colours of its flowers, and the elegance of their form, it is a splendid and curious genus. The flower, large as a lily, hangs down, and the petals, stamens, and style all turn and grow up like a flower turned inside out. Then, to complete the oddity, the leaves prolong their extremities into tendrils, and the plant walks on its toes.'—*Mason; Ainslie; Gen. Med. Top.; Riddell; Stewart.*

GLOSSINA MORSITANS, the tse-tse of Africa, is found between long. 22° and 28° E., and lat. 18° and 24° S. It attacks the horse, the dog, and the ox, but it is harmless to man and wild animals, and even to calves while sucking the cow. The tsaltsalya or zimb of Abyssinia seems identical with the tse-tse fly. It abounds on the banks of the Zambesi river.

GLOSSOPTERIS, a genus of fossil plants, several species of which occur amongst the strata of Nagpur. G. Browniana, danæoides, frondosa, leptoneura, musæfolia, stricta.—*Geol. Soc. Jo.* 1861.

GLOW-WORMS are common in all parts of India. The glow-worm of Ceylon is the female of a Lampyris, and attains a size of nearly three inches. Mr. Morren reports that he has found phosphorus in glow-worms, as well as a system of prisms in transparent lenses above the luminous matter. See Lampyrides.

GLOXINIA. The species are handsome flowering plants, bell-shaped, purple, blue, and white flowers. They require a good light rich soil, and plenty of water, but good drainage, and are propagated by seed.—*Jaffrey; Riddell.*

GLUE.

Colli, ... FR. | Sarishi, ... HIND.
Hwang-ming-kiau, CHIN. | Parakat, Parkat, MALAY.
Niu-p'i kiau, . . ,, | Vaj'ram, ... TAM.
Leim, ... GER. | Vaj'ramu, . . . TEL.

Is extracted from the parings of hides, hoofs, ears of horses, oxen, calves, and sheep, and it is used for cementing wood. Good glue is hard, brittle, of a semi-transparent and deep brown colour, and free from clouds and spots. That from deer's horns is called by the Chinese Peh-kiau and Luh 'koh-kiau, and is used internally as medicine. Agar-agar is the Malay name for the tenacious jelly or glue made from a marine plant, the Plocaria (Gigartina) tenax. It is imported into China from the Eastern Archipelago, though the Chinese likewise manufacture it for themselves, apply it as size to many useful purposes, and also

use it as food. The bamboo lattice-work of lanterns is covered with paper saturated with this glue or gum, which, when dried, is semi-transparent. It is also used in paper and silk manufacture. It is incomparable as a paste, and is not liable to be eaten by insects. When boiled with sugar, it forms a palatable sweetmeat.—*Faulkner; Williams; Morrison, M. E. J. R.; Smith.*

GLUGA. MALAY. The Broussonetia papyrifera of botanists, the paper mulberry tree; the plant from which, in China and Japan, a kind of paper is made, and clothing in the islands of the Pacific. The Javanese manufacture a paper from the liber or inner bark by a process very similar to that by which the ancients manufactured papyrus; and the ordinary Javanese paper, instead of being costly, like the papyrus, is a very cheap commodity. Its colour is that of parchment; it is very tough, and, except that it is liable to be preyed on by insects, owing to the rice-water used in its preparation, it is very durable. The names of the plant, and that of the paper, Da-lu-wang and Da-lam-bang, are Javanese words, and the Gluga culture and paper manufacture are chiefly carried on in the province of Kadiri, once an extensive seat of Hinduism, and the parties conducting them are the Mahomedan priests. It is prepared by maceration and beating.—*Crawfurd, Dict.* p. 143; *Journ. Ind. Archip.* June-Dec. 1853, p. 276.

GLUTA TRAVANCORICA. *Bedd.* Shenkurani, TAM. A valuable timber tree growing on the South Tinnevelly mountains, and other six species inhabit the Archipelago. Its timber is reddish in colour, weighs 40 lbs. the cubic foot when seasoned, has a fine grain, takes a good polish, and is well suited for furniture. Grows up to 15 feet in girth, of immense height, and with a very straight stem.—*Beddome, Fl. Sylv.*

GLYCINE HISPIDA. *Bentham.* Soja hispida, *Mœnch.*, from Glykys, sweet, the roots and leaves of most of the species being so. An annual herb of India, China, and Japan; a main ingredient of the Soja condiment. *G. Soja, Sieb.*, is said to be distinct from G. hispida.

Glycine Sinensis flowers hang in racemes from the axilla of the leaves, and are violet, yellow, or purple. Fortune found it wild on the hills, where it climbs among the hedges and on trees, and its flowering branches hang in graceful festoons. From the 20th of April to the beginning of May, along with the flowering Viburnum macrocephalum and V. dilatatum, with their large heads of snow-white flowers, Spiræa and its double variety, Weigela rosea, Moutans of various hues of colour, azaleas, particularly the lovely little amæna, Kerria japonica, the lilac and white glycine, roses, Dulytra spectabilis and Primula cortusoides, Chinese gardens are gay indeed. But perhaps the most beautiful sight of all is the Glycine Sinensis, climbing upon and hanging down from other trees. This climber, attaching itself to a tree or a group of trees, entwines itself round the stems, running up every branch and weighing down every branchlet, and in the end of April or beginning of May is covered with flowers. It is often grown in China on a flat trellis in front of the summer-house, or forms a kind of portico, which affords a pleasing shade.—*Riddell; Fortune's Wandering*, p. 66; *Residence*, p. 242; *von Mueller.*

GLYCYRRHIZA, a genus belonging to the natural order Fabaceæ, consisting of herbaceous plants with pinnated leaves, small flowers in axillary spikes, and roots running very much in the soil in which they grow. Species of Glycyrrhiza extend into Afghanistan, whence liquorice-root, jetimadh, is imported into India. The Glycyrrhiza, with both smooth and scabrous pericarps, the Arabs call Soos. Jetimadh is the G. glabra, and is imported from the Red Sea. Taverniera, with a sweet root, has the same name. G. echinata is a native of Apulia, on Mount Gardano, in Greece and Southern Russia, extending into Tartary and Northern China. The whole plant is glutinous to the touch. The roots are horizontal, in taste like the common liquorice. This is sometimes called Russian liquorice.

Glycyrrhiza glabra, *Linn.*, liquorice.

Asl-us-sus, . . .	ARAB.	Bekh-mekeh, . . .	PERS.
N'wy-k'hyo, . .	BURM.	Madhuka, . . .	SANSK.
Mithi-lakri, . . .	DUKH.	Yestimadhuka, .	,,
Jetimadh, . . .	HIND.	Adi-modram, . .	TAM.
Urit-manis, .	MALAY.	Ati madhuramu, . .	TEL.

A native of the south of Europe, Crete, and Candia, also of Cochin-China and China. The roots abound in a saccharine mucilaginous matter, which is slightly bitter, and readily soluble in water. A powder and liquorice, the well-known common extract, are prepared from it. The decoction in different forms is a common remedy for coughs. Mignan found the plant abundant throughout the country, burnt as firewood. Jetimadh is sold in the bazars as a medicine. If imported it is the root of G. glabra; if indigenous, it is obtained from the root of Abrus precatorius.

Glycyrrhiza triphylla.

Zaisi of AFGH. | Jetimadh, Malathi, HIND.

Inspissated juice, Rab-us-sus. Several species, possibly including that of Europe, G. glabra, are common, wild in Afghanistan, where they are mentioned by Griffith, and where Bellew collected two at 5000 to 6000 feet. The liquorice plant is grown in large quantities about Peshawur. The root is dug up, dried, and cut into pieces; used by the natives as a tonic in fever in doses of gr. lx., as a demulcent in coughs, etc.; also in all diseases consequent upon an undue accumulation of phlegm or bile. Price 1d. per lb.—*Stewart; O'Sh.; Eng. Cyc.; Mignan, Tr.; Royle; Sims; Nees; Bot. Mag.; Powell.*

GMELINA ARBOREA. *Roxb.*

Gumar, Gumber, .	BENG.	Kumbula, . .	MALKAL.
Gumbari, . . .	,,	At-demmata, . .	SINGH.
Yemaneh, . . .	BURM.	Cummi, Gumudi, .	TAM.
Ky-won-po, . . .	,,	Gumudu teku, . .	TEL.
Jugani-chukar, .	HIND.	Pedda gumudu, .	,,
Seevun, Shewun, .	,,		

This large tree is common throughout India, up to an elevation of 5000 feet. It flowers in February and March. The wood is highly valuable, much resembling teak, as light or lighter, the colour the same, and the grain rather closer, never warps or shrinks, and stands the action of water as well as any wood. The wood is of a pale yellow colour, easily worked, and is well known throughout India; used for picture frames, decking small boats, for making venetian blinds, sounding-boards, palanquin panels, gram measures, etc. It is very commonly used in the Vizagapatam district for the foundation of wells and other purposes, which require to be submerged in water, where it is remarkably durable. On the Bombay side, the wood is in much esteem for carriage panels, and the natives employ it in the construction of palan-

quins. It takes varnish well, and works up nicely into furniture, but is attacked readily by white ants. From its great size, straightness, and general spaciousness in appearance, being a beautiful flowering tree, this is one of the most desirable for propagation throughout the country.—*Wight; Gibson; Brandis; Cleghorn; Stewart; Sankey; Beddome; Cal. Cat. Ex. of* 1862; *Thwaites.*

GMELINA ASIATICA. *Linn., Roxb.*

G. parviflora, *Roxb., Sprenger.*

Kumatha, . . .	CAN.	Gumudu, . . .	TEL.
Shiri gumudu, . .	HIND.	Nela gumudi, . .	,,
Biddarie, . . .	SANSK.	Challa gummudu,	,,
Gatta demata, .	SINGH.	Kavva gummudu,	,,
Nelakumul? . .	TAM.		

A shrub having large orange-coloured flowers. Its leaves slightly bruised under water render it mucilaginous, which property the water retains till the mucilage is decomposed by fermentation. Its root, which is mucilaginous and demulcent, the Vyteans reckon amongst those medicines which purify and sweeten the blood in cases of depraved habit of body.—*Ains.; Jaffrey; O'Sh.; Riddell.*

GMELINA RHEEDEI. *Hook., B. Mag.* This is G. arborea, *W. Ic.*, not G. arborea, *Roxb.* It is the Atdemmata of the Singhalese, and is common in Ceylon up to an elevation of 5000 feet. A tree 45 to 50 feet high, spreading. The bark and roots are used medicinally by the Singhalese.—*Thw. Zeyl.* p. 244.

GNANA. SANSK. From Gna, to know, wisdom, the fourth degree in the Saiva system. Gnana-kanda, the isoteric doctrine of the Vedas. Gnana-ratnavali, from Gnana, wisdom, Ratna, a precious stone, and Avali, a train. Gnana-venpa, a book treating of the Parabaravastu. Gnani, ascetics possessed of mystic knowledge.

GNA-PI. BURM. The balachang of the Eastern Seas, consisting of small fish, with prawns and shrimps, first fermented and then dried. It has a considerable traffic, as no food is deemed palatable without it, and its use extends to every country from China to Bengal. That prepared at Mergui is excellent, only inferior to anchovy paste by being over-powerful.

GNARI or Nari, a Chinese-Tibetan mountainous province, connected with British India by the five Bhot passes in Garhwal and Kamaon. The Chinese viceroys are Tibetans, with 200 Mongol or Turk troops or perhaps Manchu Tartars, as they are said to use horse-flesh, which no Tibetan and no Chinese would do.

GNETACEÆ, an order of plants. Gnetum gnemon, *Linn.*, grows in Sumatra and the Moluccas; its seeds are eaten roasted, boiled, or fried; its leaves are eaten as spinage, and its fibres are made into ropes. G. scandens, *Roxb.*, grows at Kandalla, in Malabar, the Konkan, Assam, Khassya, Chittagong, and the Moluccas. It is the Thoa edulis of Willdenow. Gnemon Gnetum, *Linn.*, the Wagu or Bagu of the Malays. This tree abounds on the S. coast of Sumatra, where its bark is beaten like hemp, and the twine manufactured from it is employed in the construction of large fishing nets, and is in extensive use throughout the Archipelago. The seeds are eaten in Amboyna, and are roasted, boiled, or fried. The green leaves are dressed as curries, cooked and eaten like spinach.—*Crawf. Dict.; Marsden's Sumatra*, p. 91.

GNIDIA ERIOCEPHALA, called also Daphne eriocephala, *Wall.*, is very common on the ghats of the west of India, and in the hilly parts of the Southern Mahratta country and of the Dekhan. It probably might be turned to the same use as the Nepal plant. See Daphne cannabina;-Thymelæa.

GNOMON. Ch'haya, HIND. Ch'haya is spelt in a variety of ways in European books which treat of Hindu astronomy; and though there are a variety of elements, these are multiplied by mistakes in consequence of Europeans varying their manner of writing oriental words. The word Ch'haya means a shadow. In Hindu astronomy, Vishuva ch'haya, the shadow of a gnomon, when the sun is in the equinoctial points. Madhyama ch'haya, the midday shadow of the same at any other time of the year. Sama-mandala ch'haya, the midday shadow of the same when the sun is east or west of the gnomon. Ch'haya suta is one of the names of Saturn, meaning born from darkness.

GNYANA. SANSK. Karma is the name of one of the Kanda or general heading of the Vedas; this chaper relates to works. The other two, Gnyana and Upasbana, relate to faith and worship. See Gnana; Vaishnava; Vidya.

GNYANA SAMANDAR, a learned follower of Siva, who visited Madura in the reign of the Pandya king Kuna, and gained him over from the Jaina to the Saiva sect. The Samanal (Jaina or Buddhist) followers, to the number of 8000, were then persecuted, and hanged or banished. He seems to have instituted a hierarchy; and several monasteries exist in the south of India, tenanted by monks of the Saiva sect, whose spiritual head has the title of Gnyana Siva Achari. See Gnana.

GO. HIND., SANSK. A cow; hence Gopa, Gopala, Gorakh, Gopini, Gopi, cowherd, herds. Gobar, cow-dung. Gopi, Chandana, cowherd's sandal. Gopi Matti, cowherd's earth.

Goind, manured land, also called Jamai.

Gao-Mukhi, Cow's Mouth, the ravine in the Himalaya where the Ganges issues.

Gopura or Gopuram, a gate, a gateway of a town, the ornamental gateway of a Hindu temple.

Galatians is from Gala, milk, Goala, herdsman, in Sanskrit. Γαλατικοι, Galatians or Gauls, and κελτι, Celts, allowed to be the same, would be the nomade or herd races, the pastoral invaders of Europe. See Goala.

GOA, a city, the capital of the Portuguese territory of the same name, situated near the mouth of the river Mandavi, in lat. 15° 30′ N., and long. 73° 57′ E. The Goa Portuguese settlement on the western coast of the Peninsula of India, lies between lat. 14° 53′ and 15° 48′ N., and between long. 73° 43′ and 74° 24′ E.; area 1062 square miles, and population 392,234. Goa city has seen three great changes. There was an ancient Hindu city before the invasion of the Mahomedans. Goa was the first capital of the Portuguese, and is still the ecclesiastical metropolis of Roman Catholic India; a third town, commonly called Panjim, is the present seat of Portuguese administration. Goa territory is regarded as an integral portion of the Portuguese empire, and, with Daman and Diu, forms, for administrative purposes, one province, subject to a Governor-General, who is appointed directly by the King of Portugal, and holds his office for five years. Goa, Daman, and Diu, with Mozambique, Macao, and Timor, constitute, for judicial purposes, but one district.

To the south of Goa is the Tulu country, and

to the north and east are spoken the Konkani and Gomantaki (locally called Kudali) dialects of Mahrati. According to Mr. Beames, the latter dialect is gradually dying out. The native Roman Catholic Christians in and near Goa speak a patois which contains many Portuguese words mixed with Mahrati. Portuguese is spoken in the territory of Goa in a few families; outside of this it is a corrupted dialect. It is also spoken at Macao. It was a device of the Dutch to circumvent the Roman Catholics of Ceylon, by prohibiting the use of the Portuguese language, being that of the priests educated and sent from Goa. The attempt was, however, unsuccessful; and the Portuguese language is in almost universal use in all the towns in the maritime provinces of Ceylon, while Dutch is not only almost extinct, but the descendants of the Dutch have betaken themselves to speak the language of Portugal. Up to the present day in Madras, the people who are descendants of Portuguese, continue to use that language amongst themselves, and this is also the case in Calcutta and Bombay. The people of mixed European, Portuguese, and Indian descent are generally very dark. Nearly all the Goa population are Christians of the Romish branch. The inquisition was suppressed by royal edict A.D. 1775, but it was re-established in 1779 under certain restrictions, and the burning held privately.—*Imp. Gaz.*

GOAIYAD, a small caste in Benares and Allahabad, somewhat similar to Kahars, employed as cultivators and palanquin-bearers and boatmen. —*Sherring.*

GOALA or Gwala. BENG. A cowherd, a dairyman; one whose business or caste it is to attend cattle and sell milk. The caste of cowherds in Orissa furnishes also palanquin-bearers and domestic servants to European and natives in Bengal. It is from Gala, SANSK., milk, from which also is the Γαλατικοί, Galatians or Gauls, and the κελτί, Celts, the herd or pastoral invaders of Europe. See Go.

GOALPARA is the most westerly district of the province of Assam, forming the entrance to the upper valley of the Brahmaputra. It lies on both sides of the great river, extending from lat. 25° 32′ to 26° 54′ N., and from long. 89° 44′ to 91° E. Its name is said to have been given from a colony of cowherds who early settled in it. It has 97,732 aborigines, 132,095 semi-Hinduized aborigines, 86,000 Hindus. The aborigines are in three tribes, the Rabha 39,124, Mech 29,877, and Kachari immigrants from the neighbouring hills. The Koch'h, who number 118,091, are properly an aboriginal tribe, akin to the Kachari and Mech; but since the high position attained by the conquering rajas of Koch-Bahar, their tribesmen have been admitted within the pale of Hinduism, under the title of Rajbansi, meaning the ruling race. The term Koch'h is also applied to all new converts made by the Brahmans. The Jaliya (19,230) are fishermen, and are supposed to be connected with the Kaibartta of Bengal. The Kolita (11,527) are a caste peculiar to Assam, who exercised priestly functions under the native dynasty before the advent of the Brahmans. Mention is made of a peculiar sect called Mahapurushiya Bhakat, whose members meet at night to eat flesh and drink wine.—*Imp. Gaz.*

GOA POWDER, from the Andiva araroba (*Lancet*, 20th May 1882, p. 817). The active principle is chrysophanic acid. It is used in psoriasis. According to Mr. Smith, Goa powder consists of the powdered thallus of Rocella tinctoria, which he says has long been employed in British India as a remedy for ringworm.—*Smith.*

GOAT.

Mâs; Teys; Tuyus, ARAB.	Becco, Capra (f.), . . IT.
Chèvre, ... FR.	Caper, ... LAT.
Ziege, ... GER.	Bebek; Kambing, MALAY.
Kapros, ... GR.	Cabra, ... SP.
Bakra (he-goat), . HIND.	Kechi, ... TURK.

The goat belongs to the order Ungulata, tribe Ruminantia, sub-family Caprinæ, goats and sheep. Their position may be shown as under:—

Sub-Fam. Caprinæ, goats, sheep.

1. Capricorns, or antelope goats, or mountain antelopes. *Gen.* Nemorhœdus, 3 sp.
2. True goats. *Gen.* Hemitragus, 2 sp.; Capra, 3 sp.; Ovis, 8 sp.

Nemorhœdus bubalina is the Serow or forest goat, N. goral is the Gooral or Himalayan chamois, both of the Himalaya, and N. crispus is of Japan; Hemitragus jemlaicus is the Tehr or Himalayan wild goat, and H. hylocrius is the Neilgherry wild goat. See Capra; Ovis.

Goats and sheep are employed in bringing the borax of Tibet, and as the carriage animals for other traffic across the mountains. Coming upon them on the very narrowest, steepest, and slippiest ascent, or on the brink of a precipice, they pursue their way, not turning aside for any one or anything; and flocks of many hundreds meeting, none make a mistake, but follow their own respective leaders. Goats are chosen as the leaders of the carriage animals through the passes of the Himalaya.

The goat has a habit of shivering at intervals, and this is taken by the Hindus to be an afflatus. In the north of India a goat is turned loose along a disputed border-line, and where it shivers there the mark is set up. The Thugs would only sacrifice a goat if their patroness Devi had signified acceptance by one of these tremors. Plutarch mentions that among the Greeks, if the goat intended for sacrifice did not shiver and shake itself when water was thrown over it, the offering was not deemed acceptable to the oracle.

Goats' hair is produced in almost every district of the Panjab, and called jat. It is used for making ropes, also for matting, and for the strong bags wherein grain, etc., is carried on the backs of oxen. Grain dealers use rugs made of it in the shops in which the grain is poured out when being winnowed or weighed out. The Kuki have a large goat breed, with hair upwards of a foot in length. In the northern parts of Afghanistan, the coarse long hair of the goat is woven also into a strong material, used for covering the tents of the nomades.

The Lena shawl-wool is the produce of the goats of the Tibetan Himalaya. It used to be a prevalent opinion that these goats were found in Kashmir, but that valley is far too warm and damp for them. The best shawl-wool is produced in the vicinity of Garo, Manasarowar, and the elevated lands to the eastward. The shawl-wool is the fleece of the goat, next the skin only; the outer coat is coarse hair, and the two colours are white and light brown. The dogs of Tartary

have also a soft down below the hair, very little inferior to that of the goats.

Goat-skins for Britain are principally obtained from British India, the coast of Barbary, and the Cape of Good Hope. They form the best dyed morocco of all colours. Kid-skins supply the finest white and coloured leather for gloves and ladies' shoes.—*MacGregor*, p. 51; *Gerard's Koonawar*, p. 115.

GOAY-PIN-GYEE. BURM. A tree of Moulmein. Its seed is used for weights in weighing gold.—*Cal. Cat. Ex.* 1862.

GOBA GOBA, the stem of the leaf of the sago palm, much used throughout the Moluccas for building and fencing. Atap is thatch made of the fringe or petioles of palm leaves, doubled down and sewed on sticks or laths of bamboo.—*Journal of the Ind. Arch.*, June 1852, p. 306.

GOBARDHAN or Govardhan, *i.e.* the nurse of cattle, is an ancient town and place of pilgrimage in the Muttra (Mathura) district of the N.W. Provinces, in lat. 27° 29′ 55″ N., long. 77° 30′ 15′ E. It lies among the low rocky hills on the western frontier. Near is the sacred tank of Manasi Ganga, where Hindu pilgrims bathe at the close of the rains; and it has the temple of Hari Deva, erected during Akbar's reign by Raja Bhagwan Das of Ambar, governor of the Panjab. —*Imp. Gaz.*

GOBB, in Ceylon, a marine lagoon or back-water, caused by the rivers' mouths being blocked up, and their waters, seeking an exit, traversing the sands adjoining the sea.

GOBI, a great sandy desert in Central Asia. It is in a rainless tract, which lies between lat. 30° and 50° N., and long. 75° and 118° E., and includes Tibet, Gobi or Shama, and Mongolia. Showers of sand fall in China, which the people believe come from the desert of Gobi. In one which occurred on the 26th March 1850, and lasted several days, ten grains to the square foot collected in one day, or about 18 tons per square mile. Gobi is Mongolian for barren, empty desert. See Deserts.

GOBIIDÆ, the Gobi family of fishes of the sub-class Teleostei, order I. Acanthopterygii. The Gobiidæ are arranged into four groups,—Gobiina, Amblyopena, Trypauchenina, and Callionymina, in which are 24 genera. The Gobiidæ include the blennies, the gobies or sea gudgeons, and the dragonet. Many of the species occur in India. All the species of Gobius have two dorsal fins, scaly bodies, and a disc beneath the throat formed by the united ventral fins. By means of this disc they have the power of attaching themselves to rocks. See Fishes.

GOCALAST'HA, a sect of vaishnava Hindus who worship Krishna alone. See Avataram.

GOD, the Anglo-Saxon name of the Supreme Being. The source of this term is doubtful, supposed from Goadem, corrupted into Goden and Woden. The Semitic name of the deity, pronounced as IAO, was indicative of a god of the sun and of fire. Clement of Alexandria calls it IAU; the Samaritans pronounced IABE, *i.e.* IAHVEH. Lydus mentions IAO as a god of the Chaldæans. The Mahomedans use the word Allah to indicate the Supreme Being (Bunsen), but it was a term in use with the Arabs prior to the time of Mahomed, and seems to have been applied to Ilah, one of their deities, Ilahat being a goddess. Many nations use their name for deity as appellations for men. Allah is now of frequent use in men's names with the Mahomedans of S. Asia, as Rahmat-Allah, Abd-Allah, etc., but Rahmat-Allah was a name of the Arabs before the time of Mahomed. Many Hebrew names are compounded with their name of God, as Beth-El, Dani-El, Ezeki-El, Gamali-El. Greeks, Romans, Arabs, and Christians have applied Theos, Deus, Masiha, Christos, as names, as Theophilus, Deodatus, Masih-ud-Dowla, Gilchrist, Christian, Godfrey, Godson, Godwin, etc. The 7th chapter (ver. 179) of the Koran designates the ninety-nine attributive appellations of the deity as Asma-ul-Husaini, comely names. Mahomedans of N. India have Khuda as a frequently occurring name, as Khuda Baksh, etc.; and Hindus appropriate the names of their gods, as Govinda, Eswara Das, Krishna Das, Narayan Das, Deodutt (Theodatus) and Rama Swami.

GODAMA seems to have been a name applied to Sakya Muni after his death. See Buddha; Gaudama.

GODARA. HIND. A subdivision of the Jat tribe, on the borders of Hurriana.—*Wilson.*

GODARI. TEL. The red flowers and leaves of Grislea tomentosa, used for dyeing purposes. In the Northern Circars the leaves are employed in dyeing leather; sheepskins steeped in an infusion of the dried leaves become a fine red, of which native slippers are made. The dried flowers are employed in Northern India, under the name of dhauri, in dyeing with morinda bark, but perhaps more for their astringent than for their tintorial properties. Dr. Gibson states that in Kandesh the flowers form a considerable article of commerce inland as a dye. It grows abundantly in the hilly tracts of the Northern Circars.

GODAVARI, a revenue district of British India in the Madras Presidency, lying between lat. 16° 15′ and 17° 35′ N., and between long. 80° 55′ and 82° 38′ E.; area, 7345 (6221) square miles; population in 1871, 1,592,939. This district, under Hindu rulers, formed part of the Andhra division of the Dravida country. By 1753, Godavari had become a French province; but in that year it was overrun by the Mahrattas, then at the zenith of their power, and afterwards it was ceded to the E. I. Company.

GODAVARI or Godavery is a river of the Peninsula of India, which runs across the Dekhan. Estimated area of drainage basin, 112,200 square miles. The traditional source is on the side of a hill behind the village of Trimbak, in Nasik district, Bombay, only about 50 miles from the shore of the Arabian Sea. At this spot is an artificial reservoir, reached by a flight of 690 steps, into which the water trickles drop by drop from the lips of a carved image, shrouded by a canopy of stone. The Godavari disembogues into the Bay of Bengal by three mouths, after a course of 898 miles, during which it receives the Wain-Ganga, 439 miles; Manjera, 330 miles; Purna, 160 miles; Paira, 105 miles; Indrawati, 140 miles. It has the town of Ganga-khair on its left bank, and the towns of Rajamundry and Coringa at its embouchure. In 1846 the sanction of the East India Company was given to the construction, at an expense of £47,500, of a dam of sufficient height to command the delta, and to supply the rich alluvial soil of which that tract is composed, with the means of constant irrigation.

That dam is seven miles long, and three great barriers have been drawn across the river higher up. The Wardha, Pranhita, Wain-Ganga, Indrawati, Sabari, and Pain-Ganga, are the principal affluents whose waters feed the Godavari.

The Wardha takes its rise in the Baitul district W. of Nagpur, and, after flowing for some distance in a S.E. direction, is joined by the Wunna, which, passing under Hinginghat, flows to the south, and forms its junction with the Wardha at a place called Sweet, 18 miles S. of the latter place. At this confluence are the hills of Zoourate, and under them is the village of Chuhmunder. The Wardha flows on to the S.E., until, a little before reaching Chanda, it is joined by the Pain-Ganga, when, losing the names of Wardha and Pain-Ganga, the united stream continues under the name of Pranhita to its junction with the Godavari, a few miles below the station of Sironcha. Midway between these confluences is situated the third or *Dewalamurry barrier*, extending round in a curve for about 50 miles; and midway down this barrier the Wain-Ganga discharges itself into the Pranhita.

From the confluence of the Godavari and Pranhita, below Sironcha, to the sea, the river carries the former name, although joined at intervals by the Indrawati and other tributaries. Thirty miles below Sironcha is the second or *Enchampally barrier*; and 80 miles below this again is placed the first or *Sinteral barrier*, whence to the sea there are no material obstructions to a partial, though not perennial navigation.

The Godavari has seven mouths, viz. the Tulyabhaga, the Atreya, the Gautami, the Vruddhagautami, the Bharadwajam, the Kausika, and the Vasista. The large town of Narsapur is situated at the mouth of one of the two main branches, the French settlement of Yanān at the mouth of the other. Thirty miles up the river is the famous Dowlaishwaram anicut; 4 miles further is Rajamundry town. Northwards still is the picturesque island of Patapattishim, covered with pagodas, the favourite resort of pilgrims.

The head of the delta is at the village of Dowlaishwaram, where the main stream is crossed by the irrigation anicut. The largest of the three branches, known as the Gautami Godavari, turns eastward, and, after passing the quiet French settlement of Yanān, enters the sea at Point Koringa, not far from the port of Cocanada. The delta has been turned into a garden of perennial crops, by means of the anicut. This great work was finally projected in 1844. Operations were commenced in 1847, and completed according to the original design by 1850. Up to 1853 the total expenditure had been £153,000. The officers whose names are associated with it are Generals Sir Arthur Cotton, Frederick Cotton, Charles Adam Orr. From the anicut or weir at Dowlaishwaram, at the head of the delta, three main canals are drawn off. The total length of the main channels of distribution is estimated at 528 miles, capable of irrigating 780,000 acres. Of the 528 miles of canal, 463 miles are also used for navigation.

The *Upper Godavari* district became British territory on the 5th November 1860, the six talukas of which it is composed having been ceded by His Highness the Nizam, by the treaty of that year. It lies between lat. 17° 25′ and 19° 5′ N., and long. 79° 55′ and 81° 45′ E. The population numbered 54,680. Nearly half the population is composed of wild tribes. The exclusively agricultural classes number 30,367, and consist chiefly of the Yelma, Kamawar, Arawa, Mahratta, Telinga, Koi, and Got. Of these, the Yelma, though Sudra, enjoy a good deal of consideration, as many of the chiefs—among them the Sar Desmukhs of the four upper talukas, and the Rani of Bhadrachallam—are of this caste. The Yelma veil their women, and do not permit them to appear in public; and the men in the lower part of the district, of even the poorer members of the caste, will not put their hand to the plough. The inferior castes, all plying their respective professions, and many of them cultivating land as well, are the Kumbhar, or potters; Meriwar, or tailors; Baljwar, or bangle-makers; Teli, or oil-pressers; Rangrez, or dyers, also work as embroiderers; Dendrawar, or tasar silk weavers; Dhobi, or washermen, besides washing, attend on travellers, carry torches, fetch water, carry loads and palanquins, etc.; Julai, or weavers; Kalal, or distillers and spirit dealers; Dhimar or Bhoi are fishermen, carry palanquins fetch water, and do other menial work; Hajam, or barbers, also carry torches for travellers; Medariwar, or mat-makers; Uppariwar, or tank-diggers and stone-cutters; Waddawar, boatmen and fishermen.

The Gond tribes are Got and Koi, Sunkariwar, Mannepuwar, and Netkaniwar. The latter weave a coarse cotton cloth. They are the aborigines of the country. Although almost identical in customs and in language, they do not eat together or intermarry, the Koi claiming superiority over the Got. The proper name for the Koi is Koitor, and this is what they call themselves. By the Telingas they are called Koidora, the word Dora meaning gentleman, probably arising from the last syllable of Koitor having been taken for Dora, owing to the similarity of sound. The Koi, where they come into contact with the Telinga population, have adopted many of their customs, and have thereby to a certain extent lost their peculiarity of appearance and character. The Got keeps more aloof from civilisation; but the customs of the two races are very similar, and both belong to the Gond family. They are subdivided into many sects, according to the number of gods they worship, and they practise ancestor worship. They are timid, inoffensive, and tolerably truthful. Their restless habits, however, do not admit of their settling down as good agriculturists; and, generally speaking, they move from one spot to another once in every three or four years. But on the banks of the Sabari, and in the neighbourhood of Sironcha and Dumagudem, there are numbers of them who have settled down, and have accumulated some wealth in flocks, in herds, and in money. It seems that where they can cultivate rice, they will sometimes become attached to the soil, especially if a grove of palmyras be near, as, like all Gonds, they are fond of spirits, and the fermented juice of the palmyra (Borassus flabelliformis) is a favourite beverage with them. The Upper Godavery district has many barrows, cairns, cromlechs, and kistvaens.

GODAVERY PEBBLES, various quartzose minerals, agates, carnelians, chalcedonies, etc.,

found in the bed of the Godavery, water-worn specimens from the volcanic rocks of the Dekhan.

GODDA. CAN.? A Mysore wood, one of the Cedrelaceæ, polishes well, and is good for turning.

GODDESS. Of these there are in the Hindu religion one to each of their chief deities, Brahma, Vishnu, and Siva. They are the Sakti or energies to their respective lords. Their names are Saraswati, Lakshmi, and Parvati. The Ai and Ammuns of Southern India, and Kali, Durga, etc., of Northern India, are goddesses of the non-Aryan races, admitted mostly into the Hindu Pantheon.

GODETIA ŒNOTHERA, the evening primrose; a very pretty single-petalled white flower, blossoming only in the evening, and towards morning turning to a pink, when it closes and withers.

GODINHO. Father Manuel Godinho, of the Society of Jesus, in 1663 returned from Goa to Lisbon overland by Gambroon. He laments the almost total downfall of the Portuguese Indian Empire. He describes Surat as then perhaps the richest city of the world; notices its rising trade under the English, and of its having supplanted Goa as the emporium of Southern Asia.

GODNA. HIND. Tattooing the skin of the legs and arms of Hindu women with a dark dye. See Tattoo.

GODOWN, ANGLO-MALAY, from Gadang, MALAY, an outhouse, a warehouse.

GODRA, in Gujerat. Its chief is of the Bagela race. See Komarpal.

GODUGU GADDI. SANSK. Ch'hatri and Ch'hatra, HIND. Umbrella grass; fragrant grass growing in marshy ground.

GOERA. HIND. of Panjab. Manured land near villages, same as Nyain.

GOEWANS'E, or, as named in the low country, Vellala, constitute by far the larger numbers of the Singhalese. Agriculture, their original employ, is not now their sole occupation. They are a privileged people, monopolize all the honours of church and state, and possess all the hereditary rank in the country.—*Davy's Ceylon*, p. 113.

GOEZ. Benedict Goez, a Portuguese monk, who went from Lahore by Kābul to Kashgar, and across the sandy desert into China, where he died in A.D. 1607; his route was far to the north of Tibet. Another Jesuit, Anthony Andrada, passed through Kamaon to the Manasarowar Lake, and thence went on to Rudak, on the western confines of Tibet. His journey was made in 1624, and is discredited by commentators and geographers, because of his mentioning this lake as the source of the Ganges and Indus, instead of the Sutlej. There is no doubt, however, that the voyage is genuine, though we have no details of it.—*Prinsep's Tibet*, p. 12.

GOG and MAGOG of Ezekiel are the Yajuj and Majuj of Arabian writers, a term applied to the Mongoloid or Turanian races, whose constant irruptions from the earliest periods into the southern lands of Asia have been interrupting Aryan civilisation. The fancy of Arabian writers transformed Yajuj and Majuj into two enormous giants, whom Alexander shut up within a stupendous castle of iron and brass at the extremity of Asia, probably alluding to the mountains of the Altai. See Alliteration.

GOGA, a tree, Encernada Philippensis? found in most of the Philippines. Its woody filaments yield a soapy matter, much used in washing linen, and in the process of gold washing for the purpose of precipitating the metal from the sand. It is a shore or littoral plant, formerly ranked by botanists as an Acacia.—*Crawfurd's Dic.* p. 144.

GOGA PIR, a saint held in much veneration by the agricultural population of Dehli and the Upper Doab, who, in the month of Badhar, present offerings at his shrine, which is at Dudiera, 200 miles S.W. of Hissar.

GOGHA, in Ahmadabad, has the celebrated Makam or Saint's Rest of Piran Pir.—*Wilson.*

GOGHNA. SANSK. Literally, a cow-keeper, a guest. The meaning of the word is cow-killer, from the ancient practice of killing a cow for the entertainment of a visitor on his arrival. Even now, at a Hindu wedding, a cow is produced to be killed for the feast, but the bridegroom intercedes for its life, and it is turned loose at his request.—*Elph.* p. 186.

GOGLET. ENG. In Hindi, Koza. A water-vessel with a bowl-shaped bottom and a long stalk-like neck. They are made of earthenware or of metal or alloys, and are the usual vessels in which Europeans and natives hold their drinking water. Their name is from the gurgling sound produced when the water issues.

GOGO, a seaport town on the coast of Kattyawar, on the west side of the Gulf of Cambay. Its sailors or lascars are remarkably courageous and expert. Its custom-house is in lat. 21° 40′ 40″ N., and long. 72° 15′ 50″ E. It is the chief town of the subdivision of the same name in Ahmadabad district, Bombay.—*Imp. Gaz.*

GOGRA (Ghagra), the great river of Oudh. It rises in the upper ranges of the Himalayas, passes through Nepal, receives several tributaries, and joins the Ganges at Chapra, in lat. 25° 43′ N., long. 84° 43′ 30″ S. Faizabad town is on its bank.

GOGRA. HIND. The open cotton pod.

GOHATTY, in lat. 26° 5′ 8″ N., long. 91° 43′ 8″ E. A large station in Assam, on the Brahmaputra, 69 miles E. of Goalpara. The level of the Brahmaputra is 70 feet above the sea; Kamaikia temple is 825 feet, and the highest point near Gohatty 1002 feet.—*Herm. Schl.*

GOHELWAR, one of the five southern districts of Kattyawar.

GOHILA or Gehlot, a race descended from Bappa, who in A.D. 727 seized Chitor from the Mori tribe, and founded the Newar dynasty. They were driven from Marwar by the Rahtor Rajputs in A.D. 1200, and on that event they were led into Kattyawar, by their chief Sejuk. They were a distinguished race, and claim to be Suryavansi. Their first residence was Joona Khergur, near the bend of the Loony in Marwar. They took it from one of the aboriginal Bhil chiefs, named Kherwo, and had been in possession of it for twenty generations, when expelled by the Rahtor at the end of the twelfth century. Thence migrating to Saurashtra, they fixed at Perumgarh. Afterwards one branch settled at Bugwa, and obtained by marriage Nandan-nagar or Nandote; another branch at Sehore, and founded Bhownaggar and Gogo. The former town, on the gulf of the Myhie, is the residence of the Gohils, who have given their name, Gohilwar, to the eastern portion of the peninsula of Saurashtra. Gohilwar has still some of its Koli and Surweya proprietors. The rawal of Bhownaggar is de-

scended from the eldest son of Sejuk.—*Rajasthan*, i. p. 114.

GOITRE.

Aubi, ...	Beng.	Ghega, Ghenga, .	Hind.
Ba, Ke-ba, . . .	Bhot.	Kunt'h-mala, . .	,,
Ying-tai, Tsoo-po-tsi,	Chin.	G'. beig, . . .	Tib. ?

This disease occurs in Kamaon, among the Abor of the mountains bordering the valley of the Brahmaputra, and other mountain tribes. Goitre is rare in the valley of Kashmir. The natives of India employ for its cure a leaf-looking substance, called Gallur ka putta, Hind., supposed to be dried sea-weed. Mr. Vigne purchased at Ladakh a piece of common sea-weed, which had been no doubt brought there by the merchants trading between China and Turkestan. He saw few cretins. Goitre occurs E. of the Indus at elevations of 4000 feet; but Mr. Bramley states that it is more common on the crest of a high mountain than in the valley of Nepal. The swelling forms immediately below the chin, extending from ear to ear, and grows sometimes to such an enormous size, as to hang from the throat down upon the breast. It prevails among the people inhabiting the Morung, Nepal, and Almora hills. It is particularly met with in the low lands adjacent to these hills, from the frontier of Assam, through Binji. It is prevalent among the natives of the ranges which border the Indian plains. It occurs in Nepal in animals as a congenital ailment. It is said to occur in men who drink the waters of the Gandak river. It is also found in the Himalayan sheep and goats which accompany the salt traders, and whose loads are supported in ascending by a band round the throat. The Lepcha is far more free of this disease than the Bhotia, or than any of the tribes of E. Nepal, and he is both more idle and less addicted to the head-strap as a porter. It is almost universal in some villages of Bhotias, where the head-strap alone is used in carrying in both summer and winter crops, as also amongst those families who carry the salt from the passes to the Nepalese villages, and who very frequently have no shoulder straps, but invariably head-bands. The disease is most prevalent in the mountainous regions of both the old and new world, and in these the practice of supporting enormous loads by the muscles of the neck is frequent. Goitre is common in the Chinese province of Sze-chuen, in the gorges of the Upper Yand-tsze, and sea-weed has long been used in its cure.—*Smith, M. M. C.; Turner's Embassy*, p. 87.

GOKAK. The principal cataracts or waterfalls in India are near Simorri in Rohilkhand; but at Gokak, on the Gutpurba, are the Gairsappa, where from top of fall to surface of basin is 888 feet, and the depth of basin is 300 feet—1188 feet; and from 300 to 600 feet across during the rains. The Yena in Mahabaleshwar is 600 feet; Cauvery, 300 feet. Cataracts of Subunreka, Chutia Nagpur, and Hurrori Ghat,—the falls, 15, 20, and 400 feet respectively; about 500 feet across crest.—*Curiosities of Science*; *Dr. Buist's Cat.*

GOKAL or Gocul, a small town on the banks of the Jumna below Mathura. Radha, mistress of Krishna, was wife of a cowherd of Gokal; hence one of Krishna's titles is Gokal Nath, Lord of Gokal. Gokal is almost an island, and is one of the prettiest spots in the holy land of the Hindus. The scene there is still as pastoral as it had been 3500 years ago. Large herds of heavy-uddered kine remind us of the days of Nanda, though their number is far short of nine lakhs, possessed by that shepherd-chief of old.—*Tr. of Hind*, ii. p. 117. See Krishna; Radha.

GOKAL-ASHTAMI or Jan'm-Ashtami, a Hindu festival in commemoration of the birth of Krishna, an event which is said to have taken place at Mathura, at midnight, about the 22d August, on the 8th of Shravan; but one Vaishnava sect keeps the holiday on the 8th and another on the 9th of Shravan. Krishna is stated to have been born of Devaki, niece of Kans, king of Mathura. Kans having had it predicted that one of his race would destroy him, he endeavoured to compass the death of Devaki's offspring, in which he failed, and on the 9th Krishna was removed to the house of a cowherd named Nanda. The worshippers abstain during the day from certain articles of diet; at night they bathe and ornament the image, and offer the tulsi or Ocimum sanctum. On the following day a Brahman serves as pujari, and afterwards he himself is worshipped. The 8th day is held by all the Gaoli or cowherd race as a great jubilee day, from the circumstance of Krishna having been reared by one of their people. They join hands and dance, and shout Govinda! Govinda! The shrines of Kanoba are much visited at night. The Bhagat of the shrine, by self-flagellation, becomes hysterical, which is deemed by the people to be a possession by the deity, on which they prostrate themselves, burn incense, and present sick people to the Bhagat. On the following day the Bhagat's disciples work themselves into hysterics.—*Bombay Gazetteer*.

GOKALASTHA, Gosain ascetics, teachers of the doctrines of Valabhacharya. See Rudra; Sampradayi.

GOKALNATH, son of Vitala, was a grandson of Valabhacharya, and expounder of his grandfather's tenets.—*Growse*. See Rudra; Sampradayi.

GO-KARNA, lit. Cow's Ear, a place of pilgrimage, sacred to Siva, on the W. coast near Mangalore.—*Dowson*.

GOKATSEKU, a festival, held with much ceremony and enjoyment.

GOKHA. Uria. A caste of fishermen.

GOKHRU. Hind. Caltrops.

Tribulus lanuginosus, *L.*		T. terrestris, *Linn.*	
Khusuk-i-kabir, .	Arab.	Ackneerenchi, .	Singh.
Gokhur, . . .	Beng.	Ana-neriuji, . . .	Tam.
Ghejasudu mustra,	Sans.	Yenuga-palleru, . .	Tel.

The seed, which is highly mucilaginous, as is also the whole plant, is cooling and demulcent, taken in water as a diluent. Very abundant, and troublesome to the naked foot. The form of the gokhru burr is adopted by the Hindus for a bracelet.—*Gen. Med. Top.* p. 135.

GOL, society; whence Mogol (Mogul, Moghul).

GOLA. Hind. A caste employed as rice cleaners, or in salt manufacture. A granary, a store of grain or salt; a low round-shaped hut, in which Bengal farmers deposit corn on a stage.

GOLAKA or Golak. Sansk. A son born of a widow. Among the Mahrattas, the term is considered to apply to a caste supposed to be descended from the illegitimate offspring of a woman of the Brahman caste. Randa-golak is the adulterous progeny of a woman who has a husband; Randa-golak-golak, the illegitimate son of a widow. The Golaka caste at Poona act as astrologers,

agents, money-changers, and are held as no better than Sudras.—*Wilson.*

GOLA-PURAB. HIND. An inferior tribe of Sunadh Brahmans, who cultivate lands in the Agra district.—*Wilson.*

GOLCONDA or Golugonda, the name of a town and of its taluk in the Vizagapatam district in the Madras Presidency; population, 94,782, almost all Hindus. In 1836 the rani was murdered; and in 1845, and again in 1857-58, the chiefs rose in rebellion, and troops were employed against them.

GOLCONDA, a fortress and hamlet on the left bank of the Moosa river, 5 miles W. from Hyderabad, now under the Asof Jahi dynasty. Golconda was formed into a Hindu kingdom in the reign of Muhammad Taghalaq, by a descendant of a royal house of Telingana. A Mahomedan dynasty was subsequently founded here by Kuli Kutub Shah. He ruled for 60 years, during which he was employed in reducing the Hindus eastwards to Masulipatam and Rajamundry. Golconda fell to Aurangzeb in 1677, after a protracted siege. In Orme's time, under the Asof Jahi dynasty, the Golconda sovereignty included Arcot, Kurnool, Cuddapah, Rajamundry, and Chicacole. The town of that name has almost disappeared, but the fortress on a fortified rock remains. It is commanded by a low range of hills to the north. See Hyderabad.

GOLD.

Zahab,	ARAB.	**Zar,**	PERS.
Guld,	DAN., SWED.	**Zloto,**	POL.
Goud,	DUT.	**Oiro, Ouro,**	PORT.
Or,	FR.	**Soloto,**	RUS.
Zabab,	HEB.	**Suvarnam,**	SANSK.
Sona,	HIND.	**Ponnoo,**	TAM.
Oro,	IT., SP.	**Bungarroo,**	TEL.
Sol, Aurum,	LAT.	**Altin,**	TURK.
Amas, Kanchana,	MALAY.		

Gold is almost always found native, but seldom perfectly pure, being alloyed with minute quantities of other metals, which sometimes considerably affect its colour. Sometimes it occurs in combination with silver, constituting electrum; with tellurium in native tellurium; with silver and tellurium in graphic and yellow tellurium; and with lead and tellurium in foliated tellurium. A native amalgam of gold has been found in California, especially near Mariposa, and in Columbia; and an alloy of gold and bismuth in Rutherford County, North America. It sometimes occurs in small quantities in metallic sulphides, as in galena, iron pyrites, and copper pyrites, and is occasionally alloyed with palladium.

The finest native gold from Russia yielded—gold 98·96, silver 0·16, copper 0·35, iron 0·05; sp. gr. 19·099. A gold from Marmata afforded only 73·45 per cent. of gold, with 26·48 per cent. of silver; sp. gr. 12·666; 8 to 1 is the most common; 12 to 1 also is of frequent occurrence. Copper is often found in alloy with gold, and also rhodium. A rhodium gold from Mexico gave the sp. gr. 15·5 to 16·8, and contained 34 to 43 per cent. of rhodium. Iron and copper pyrites are often mistaken for gold by the inexperienced in ores; but gold is at once distinguished by being easily cut in sizes, and flattening under a hammer. Pyrites, when pounded, are reduced to powder; iron pyrites are too hard to yield at all to a knife, and copper pyrites afford a dull greenish powder. Moreover, the pyrites give off sulphur when strongly heated, while gold melts without any such odour. Native gold is to a large extent obtained from alluvial washings. It is also found disseminated through certain rocks, especially quartz, gneiss, and talcose rocks, and it is often contained in pyrites, constituting the auriferous pyrites; the detritus affording gold-dust has proceeded from some gold-bearing rocks.

Gold is mentioned as an article of the eastern commerce of ancient times. In the Bible (1 Kings ix. 28), about 1000 B.C., Solomon king of Israel made a navy of ships in Ezion-geber, which is beside Eloth, on the shore of the Red Sea, in the land of Edom. And these ships brought gold, silver, and precious stones from Ophir and Tarshish in such quantities, that king Solomon exceeded all the kings of the earth for riches. Silver was so plentiful at his court, that it was accounted nothing of. The king's drinking-cups were made of pure gold, and his shields were covered with beaten gold. It has never been settled where that Ophir and Tarshish were situated, but we are distinctly told that the navy of Tarshish brought gold and silver, ivory, and apes, and peacocks; and it has been surmised by some writers that Tarshish was either China, or some islands in the China Seas. Ophir has been variously supposed to have been some district or port in the Red Sea, on the east coast of Africa, or on the Malabar coast or coast of Malacca. Some Portuguese historians have supposed that it was Sofala, or some other place near the mouths of the Zambesi, on the east coast of Africa. The Tarshish fleet is, however, said to have arrived at Ezion-geber only once every three years, from which we may fairly infer that the voyage was a considerable one, or that the ships had to go with the S.W. monsoons, and return with the N.E. winds, or that they made a trafficking voyage from one place to another, until the cargo was sold and another shipped. Ships or boats coasting from the Red Sea to the mouths of the Zambesi would scarcely take three years for a trip. Ezion-geber, on the shores of the Red Sea (1 Kings ix. 26), is a little port at the head of the Elamitic or eastern gulf of the Red Sea.

There are at present in the Eastern Archipelago two places called Mount Ophir, one of them a mountain in Sumatra, in the Palimbayang district, 9770 feet above the sea, to which the name was given by the Portuguese, and they gave the same name to a mountain 40 miles N. of the town of Malacca, 5693 feet high. In the vicinity of both of them gold has been obtained.

Africa.—There are gold mines in Africa at Kordofan, between Darfur and Abyssinia; also south of Sahara, in the western part of Africa from Senegal to Cape Palmar; also along the coast opposite Madagascar, between lat. 22° and 28° S. Ethiopia was conquered by the Egyptians, and its gold mines were worked by Egyptian skill. The gold was found in quartz veins within a slaty rock, at various spots in the Nubian desert between Derr on the Nile and Souakin on the coast. They were said to bring in each year the improbable sum of 32 millions of minæ, 70 millions sterling (Diod. Sic. lib. i. 49), as was recorded in the hieroglyphics under the figure of the king in the Memnonium, who is there offering the produce to Amun-ra. To these mines criminals and prisoners taken in war were sent in chains, to work under a guard of soldiers. No other known mines were so rich. From the word

Noub, gold, the country received the name of Nubia, or the land of gold, and gold was shipped from the port afterwards by the Ptolemies named the Golden Berenice, not many miles from the modern Souakin.

In *Arabia*, silver, iron, lead, and copper are met with in different parts, the last recently in Oman; and gold is mentioned by the ancient writers, but at present it is not known to occur in Arabia.

In *Ceylon*, gold has been discovered at Saffragam. Ilam has been said to be the Tamil name of Ceylon, and to signify gold, but gold in Tamil is Ponnu.

In *India*, scales of gold are found in the gravel of river-beds over a great extent of country.

On the *Malabar* coast, in particular, it is widely diffused. The geological formation there is very similar to that which led Sir Roderick Murchison to foretell the existence of gold in Australia. The discovery there in the 19th century, of shafts and adits of unknown miners, shows that the region had long been known as auriferous.

In *South India*, writes Mr. Burr, gold occurs in Coimbatore and the southern declivities of the Neilgherry Hills. Sir Whitelaw Ainslie (Materia Medica, i. p. 514) mentions that the gold discovered by Mr. Mainwaring in the Madura district, occurs mineralized by means of zinc, constituting a blende. The streams running through the Palghat valley, which unite about 15 miles below Palghatcherry, and form the great Ponany river, all contain gold. In June 1832, Lieutenant Nicolson visited Darampuray, at the foot of the Shevaroy Hills, Sattiamungalum, Donagancottah, Addivarum or Stremogoy, and Metapollum, where gold is found. Natives likewise wash for gold at the branch of the Cauvery which runs past Darampuray. Gold mines are mentioned by Heyne (Tracts, p. 342) as being worked at Suttergul, a few miles from Pungumpilly. At Pulkanath, 14 miles north of Dindigul, just under the east end of the Pulney mountains, gold is found in small particles in the alluvium and sand of a plain at the foot of a small mountain. Mr. Burr mentioned the southern declivities of the Neilgherry mountains as gold districts; and Dr. Benza stated that gold had been found on the plateau of the Neilgherry Hills, below Gradation Hall.

In 1831, Mr. Sheffield reported that gold-dust weighing 11,449 fanams had been collected in a few of the taluks of Malabar, and that gold is found in all the rivers of the Malabar Province, from the stream which falls into the sea at Elatur, about 8 miles north of Calicut, as far south as the numerous streams flowing through the Palghat valley, which form their junction about 15 miles below Palghatcherry, to the great Ponany river, and some of which reach the southern boundary between Cochin and Malabar about 110 miles to the S.E. of Calicut. Lieut. Nicolson during 1830 and 1831 traced the source of the gold to its matrix in the rocks of the Kundah and Mokurty Hills, and he found many pits 20 to 40 feet in depth, sunk on the different hills in the neighbourhood of Devalla. Agricultural slaves of the Panier caste had, it is said, on several occasions during the last few years come across nuggets of gold, which were of sufficient value to enable them to cease work for two and three years at a time.

Mr. W. King, deputy superintendent of the Geological Survey, examined a considerable portion of the Wynad, finding quartz reef apparently auriferous through a considerable extent of country, and obtained gold at the rate of 25 dwt. to the ton from some of the surface outcrop. The chain more immediately connected with the gold washing is formed of the Kundah and Mokurty Hills to the S.E. of Calicut and Neilgherries to the east, and the Wynad mountains to the N.E. These send off numerous lateral ranges, between which are chief valleys, in most places closely covered with forest. The most extensive of these is that of Nellumbur, including nearly the whole of the Ernaad taluk, bounded on the E. by the Neilgherries, on the N. by Wynad, on the N.W. by a lateral range running S. from the Ghats called the Wawoot Hills, and on the S. by the Kundah and Mokurty mountains. From these on all sides innumerable mountain streams descend, and, uniting near Nellumbur, form the Beypur river, of considerable magnitude, which falls into the sea about 8 miles to the southward of Calicut. In the mountainous district of Wynad, streams in the same manner descend through every valley, and unite into streamlets and rivers, which fall into the Cauvery in the Mysore and Coimbatore countries, comprising an auriferous tract of 1500 square miles. The part most abundant in gold is at Malealam, near the Mysore frontier, where one grain in every 65 lbs. of earth occurs. In Wynad it is found in the sands of Cherankod, Devalla, Nelyalam, Poneri, and Pulyode.

The Punapova, or Golden River, rises in the Paral Mallah N.E. of Mokurty, forming part of the main chain of the Neilgherries. The Punapoya descends the mountains between Alliampully and the Carcur Cherum, and long before its formation with the Carambye it receives both the Kellakumpoya and Caracoopoya.

In the Nellumbur valley the washings are innumerable; the principal, however, are in the thickest part of the jungle immediately under the Wynad Hills, and near the villages belonging to the Tirupaad of Nellumbur.

In *Mysore* there is an auriferous tract near Baitmangalam, at the base of the Baterine Hills. Lieut. Warren of H.M. 33d Regiment, in 1802, found it in the small nullahs or ruts or breaks in the ground at Warrigum, a small village 4½ miles S.W. of Baitmangalum, also on the banks of the Palar river, and the Ponian near Caargory; and also at Marcupium, 3 miles south of Warrigum, where mines were worked by natives which had also been worked by Tipu. Heyne likewise (p. 41) stated that gold had been found near the hills to the S.E. of Ooscottah. Betwixt Annicul and Punganore it was found disseminated in quartz, and also in the alluvial soil.

Southern Mahratta Country.—About the year 1840, Captain Newbold (p. 44, vol. xi. of the Madras Lit. Journal) reported gold washings in the bed of a rivulet at Sattoor, a few miles from Dhoni, in the Kuppatgode range of hills near Damul; also in the sands of the Hurti rivulet, in the same range, a few miles to the south of Gudduk; and in the Kir taluk of the Dharwar collectorate, near Chik Mulgund. He also obtained a small button of silver from the auriferous ore collected in the sands near Dhoni, and a grey silver ore in a fragment of quartz. Subsequently, in 1852, Captain Ayton and Mr. Le Souef examined the auriferous tract of the Kuppatgode Hills,

and reported that it occurs in a broad band of chloritic hornblende, argillaceous and hematitic schists, between two stony bands of granitoid gneiss; and native gold-washers after the monsoon wash the heavy deposits of crushed quartz (detritus) which the rains bring down.

In the *Ceded Districts*, black sand mixed with the gold is found in the bed of the river at the village of Canahally, near Bellary. Gold is mentioned as occurring at Suttangul. Heyne, at p. 342 of his Tracts, describes it as having been discovered near Royacottah, not far from Pangampilly, near Hurrydrug. Also a nullah takes its rise about a cos from Bavehully taluk, a hamlet of Mydur, in the Harpunhully taluk, at a hill called Jageracullygoodda; and there is also another nullah, called Sheghahulla, rising in the same hill, and running into the Baegaly tank, where gold sand was formerly washed, but a man cannot procure more gold than will pay him for his day's labour.

In the *Hyderabad* Territories, gold occurs at Goodaloor or Godalore, on the Godavery. Dr. Walker (p. 184, vol. xvi. of Madras Lit. Soc. Jour.) mentions its occurrence where the Ramgher and Cummumet Circars meet, and also in several nullahs that feed the Godavery from the south. It is washed for also in the bed of the river nearly opposite Marrigudum, in the Nuggur taluk, also where the Kinarsani nullah falls into the Godavery a little below Badrachellum.

Northern Circars.—Gold washing is carried on at Sumbulpur and Cuttack, and also in the beds of the Mahanadi and its affluents. The natives obtain a little gold by washing in the streams near Vizagapatam, in the Suvarna Rika or stream of the golden sands, the Lanji, the Godavery, and some parts of the bed of the Kistna.

In the *Central Provinces* gold-dust is found in the beds of rivers at Purnalia, Chutia Nagpur, in the beds of rivers in Manbhum and Palamow, and in the Paiqdhur nullah, in the Seoni district. The little stream rises in the Konye range of hills, and falls into the Wain-Ganga. The natives say they never get more than four annas' worth by a day's work, and would consider it unlucky if they did, as the goddess who is supposed to make it would then leave their locality. It is found in the Balaghat, being washed in the Deo and Sone rivers, in the Sonbera nullah near the Panchera Ghat in the Dhansua pargana, and in the Nara river of the Mau tract, but the quantity obtainable scarcely repays the labourers. It is also washed in the sands of the Banjar river, an affluent of the Nerbadda; likewise in Bastar from the sands of the Kutri river, and towards Prattapur, and in the forks of the Kutri and Indravati rivers; also in some of the nullahs of the Chanda district; and diamonds and rubies were formerly obtained near Wairagurh.

In *Afghanistan*, gold and lapis-lazuli are found at Huladat near Bamian, and at Istalif north of Kābul, also in the Kābul river, and auriferous rocks occur near Kandahar.

Central Asia.—Gold is found on the banks of the Basha stream, in Little Tibet. Vigne had no doubt that the drun or marmot of Little Tibet are the 'ants as big as foxes' noticed by Herodotus as throwing up gold. Nagir is celebrated for its gold washings. Tavernier tells (p. 156) that 'toward the Thibet, which is the ancient Caucasus, in the territories of a raja, beyond the kingdom of Chachmeir, there are three mountains close one by another, one of which produces excellent gold, the other granats, and the third lapis-lazuli.' Thokjalung, in lat. 32°, is the chief gold field of Western Tibet. It is a large desolate plain, about 16,000 feet above the level of the sea, and in 1868 the pandit sent by Captain Montgomerie saw a nugget weighing 75 tolas, nearly 2 lbs. In Tibet the gold fields are said to extend from Rudok to Lhassa, or eleven degrees of longitude. They also extend northerly to between Aksu and Ili. The places mentioned in Tibet are Thok-Jalung and Thok-Daurakpa, Tang-Jong and Sarka Shyar. The gold mines of Sar Chaka are about 100 miles north of the borax mines of Gnari. It occurs in nuggets in quartz. The gold mines of Thok-Jalung, in lat. 32° 30′ N., are north of Kailas; and the mines under the still loftier peaks of Ailing Gangri are said to be especially productive.

There is a gold mine at Dango Bookpa, twelve days' journey S.E. of Manasarowar; and they say one was discovered between Gungeoo and Manasarowar, which was immediately shut up by orders from Lhassa.

Gold-dust is imported into the Panjab from Elache in Khoten. Gold is found in Gnari and Guge, Baltistan and Zanskar. Dr. Cleghorn mentions (Report, p. 178) that a little gold-dust is brought across the higher range through Chilas from the valley of the Indus, where gold washing is carried on to a considerable extent.

Lieutenant Wood mentions a torrent in Wakhan, called Zarzamin, Gold ground, and says (p. 382) all the tributaries of the Oxus are fertile in gold. Gold-dust to the value of £8590 was imported from Turkestan into India in 1871, and a new gold field has been discovered near Khoten.

Indus and Panjab.—Gold is obtained from the sands of the Indus; and between Attock and Kalabagh about 300 persons are employed in washing the sand for gold, which occurs in small flattened grains. The Indus flood of 1842 strewed with gold the fields of Chuch above Attock. Dr. Thomson (Tr. p. 212) found a number of people a little below Khapalu, washing the sand of the Indus for gold; but the work is only carried on during winter, when labour is of no value for other purposes. He purchased for a rupee (paying, he believes, a good deal more than the value) the produce in gold-dust of one man's labour for three weeks. It is found in the districts of Ambala, Kangra, Lahore, Rawal Pindi, Jhelum, Hazara, Bunnu, and Peshawur. It occurs in the form of minutes scales in the sandstone of the Salt Range, a lower range of hills running parallel to the Himalayan chain, between the rivers Indus and Jhelum; it is also found in small quantities in the sands of the Indus, Jhelum, Beas, and Sutlej; but the gains are not more than from 3d. to 6d. a day, and the proceeds of the annual lease of gold washing amounted in one year to but £84. The gold washings of the Salt Range are nearly all in the Jhelum district. In the year 1850, 158 cradles were at work, and they were taxed from Rs. 2 to 5 per troon; the total tax amounted to Rs. 525. In the streams where gold sand is washed, grains of platinum are occasionally found in small quantities; the gold-seekers call it Safed sona, white gold, and reject it as useless. Platinum has also been found in the Tavi river of Jummoo

territory, and in the Kābul river at Naushera. Gold has been found between Ambala and Kalkah. In the neighbourhood of Patiala is a small mountain stream where gold is washed for, and gold-dust can be obtained from sand in the Srinuggur district, and in the rivers of Kamaon.

Hindustan.—Gold is obtained in the sands of the Gumti river, at the Gandak and Ningti, also those of the Raniganga and its tributaries the Koh and the Phika.

In *Assam*, at Heerakhond, diamonds occur. Tavernier tells us (Tr. p. 156) that in his time gold 'comes from the kingdom of Tipra, but it is coarse, almost as bad as that of China.' Gold-dust is washed for in the Tezpore district. The value of the gold on the spot is Rs. 16 the tola of 180 grains. At the junction of the Dohiri stream with that of the Brahmaputra, about 375 oz. are said to be collected annually. The Brahmaputra was followed from Suddya to Paghat. Gold-dust was found along the banks of the stream, particularly at angles or reaches where the alluvial matter is re-deposited.

Burma.—From Assam southwards, and into the Eastern Archipelago, gold is washed for by the Burmese, Malays, and Chinese. Mr. Oldham says, 'The geological structure of the greater portion of the Malay Peninsula, extending to Arakan northwards, so far as is at present known, indicates the probability of auriferous deposits being found throughout the whole extent, on the flanks of the central ranges of high ground. The ascertained existence of gold in more localities than one in the Tenasserim Provinces, at Shoay-gween in Pegu, and the association in all these localities of magnetic iron-sand with the gold, a mineral which is so constantly the accompaniment of gold as to have been frequently called by miners "the mother of gold," confirm this reasoning from analogy; and I have little hesitation in stating my conviction that such auriferous deposits will be found to occur at intervals throughout the whole range, and that locally they will prove to be very rich.' This metal is largely used by the Burmese in the decorative arts; and in former years 400 or 500 viss were annually imported from China. But in the Mo-goung district there is a considerable gold-field. Mr. Golding, of Australian experience, contracted with the king to work one square mile of this field for a sum of Rs. 25,000 annually for 10 years, but Mr. Golding succumbed to fever; he, however, pronounced the fields to be equal to any in Australia, if not better. To the N.E. of Mandalay, in the Shan district, there is another field of gold; but the locality is malarious, and but little gold is procured. At Thayet-pein-yua, near the Myit-Nyay, on the road to Pyoung-shoo, to the S.E. of Mandalay, the gold quartz is found in abundance, the reefs cropping up from the ground. A Shan procured from here a piece of quartz 3 lbs. in weight, that produced exactly 2½ tikals of gold. In the Yaw district, to the S.W. of Mandalay, gold is obtained in fair quantities in the alluvial deposits; it exists at Sagaing, Kannee, Sein-joo; is also obtained from the Kyen-dwen river, also from the sands of most of the streams between Mandalay and Mogoung, and in the sands of the streams in the vicinity of the coal mines of Thinga-dhau. The washings in Burma are principally amongst the streams to the eastward of the Irawadi, though those to the west also yield it. The Kibiung stream is one in which it is thus sought. Gold-dust is found in the Hukong valley, and small solid nuggets of it in the banks of the Kap-Dhoop stream; and along with the gold, khumpok or platina, which the metal-smelters melt and mix with alloys of copper and silver, for bowls, tobacco-pipes, etc. Gold-washers near the coal mines of Native Burma can, it is said, earn 303 yuey = 3s. per diem. The dust is deposited by the Nars rivers, at the mouth of the Martaban stream, a tributary of the Shoay-gween river. The gold-dust and flakes and nuggets found in the surface sands of Shoay-gween are of considerable purity, yielding 92 per cent. of gold and 8 per cent. of silver.

Malay Peninsula and Eastern Archipelago.—The metal is found in sufficient abundance to be worked, in the Malay Peninsula, in Sumatra, the northern, western, and southern sides of Borneo, the northern and south-western peninsulas of Celebes, and in a few parts of the great Philippine islands of Luzon and Mindano or Magindanao. It has been coined for money at Acheen. Mr. Crawfurd (vol. xiv. p. 433) gives a table showing the amount received in Calcutta, from 1801 to 1814, from the west coast of Sumatra, and from Borneo and the rest of the Archipelago, a total of 146,195 ounces, valued at £621,328, 15s. Mr. Logan estimated the total produce of all the Malay Peninsula at 20,000 ounces; it is washed from the sands of the Tenasserim on the south, and the streams that tumble from the high granite mountains between Yay and Monmagon are constantly 'rolling down their golden sand' into the valleys around. It has been collected in small quantities in the tin deposits east of Tavoy. Mr. O'Riley found gold in the tin from Henzai, half a degree south of Yay; and 'almost all the creeks,' says Dr. Helfer, 'coming from the eastern or Siamese side of the Tenasserim river, contain gold. The greatest quantity is obtained close to the old town of Tenasserim, where people wash it, and obtain sometimes one anna's weight each, during the rainy season.' At the head-waters of Tavoy river, it is found in an alluvial or diluvial formation of red earth and pebbles, very similar to that in which gold is found in North Carolina. Mr. O'Riley says that the assay master at the Mint in Calcutta, in 100 parts reported gold 87·895, silver 9·244, base metal 2·864. In the Malay Peninsula, gold is chiefly got at Ulu Pahang, Tringanu, Kalantan, Johole, Gominchi, and Jellye, at Reccan and Battan Moring, and other places, at the foot of Mount Ophir; and in Nanning, near the hill Buket Jalatang. Ophir mountain is about 40 miles east of Malacca; its height is calculated at 5693 feet. Gold-dust is found at Taon and Gominchi, near its base, which at an early period gave it the name Ophir, and later on suggested it as the source of Solomon's wealth, the Aurea Chersonesus of antiquity. It occurs there disseminated and in thin granular veins, in quartz and in alluvial deposits, such as beds of streams. Gold is found in Perak at depths of 30 to 40 feet below the surface.

Siam.—Gold is found in Siam at Bang Taphan, in the province of Xamphon, at the foot of the Three Hundred Peak mountains. On the east side of the mountains at the base of which the deposit rests, 'the Siamese Government,' says Dr. Morton, 'have several hundred men perma-

nently occupied, each of whom, it is said, is expected to deliver one tikal (about one rupee and a quarter) weight of gold-dust per annum. The Burmese authorities in former times also employed people in this work at the streams on the British side of the boundary, but though the quantity then procured was greater than at present, this does not appear to have ever been considerable. The method adopted is that of digging a longitudinal excavation in the sand, and washing from time to time the deposit found therein.'

In *Sumatra*, after the rainy season, Tavernier says (Tr. p. 156) they find veins of gold in the flints (quartz?), which the waters wash down from the mountains that lie toward the N.E. Upon the west side of the island, when the Hollanders come to lade their pepper, the natives bring them great store of gold, but very coarse metal, if not worse than that of China.

Borneo.—The produce of the western side of Borneo, in the neighbourhood of Montradok, is by far the largest. The metal is found in small veins from eight to fifteen feet below the surface. If the depth of the vein be less than ten feet, a trench is dug, the whole of the upper stratum being removed; but if deeper, a shaft of three feet square is sunk perpendicularly into the vein, and the miner works into it about ten feet in both directions, sending the ore up in baskets. When it is all removed, another shaft is sunk into the vein 20 feet beyond the first, and the miner works back into the old excavation, extending his labours ten feet in the opposite direction. The gold is for the most part as fine as sand, and is often adulterated with a glittering sand called passir B'rni, or Borneo, sand. On one occasion rain fell in great quantities in Sarawak, and a considerable portion of the face of the Trian mountain was washed down into the plains below. The deposit was found to abound in gold, and afforded work for fully 2000 men for about a month or six weeks, and it was reckoned that at the smallest average they procured a bunkal a month per man. The gold was in lumps, and not in dust, several of the lumps weighing from three to four bunkal, and they were rarely less than one or two amass in weight.

In *Celebes*, according to Professor Bikmore (p. 378), gold occurs over all the northern peninsula, from the Minahassa south to the isthmus of Palas. Tavernier also relates (Tr. p. 156) that 'Celebes or Macassar produced gold, which is drawn out of the rivers, where it rowls among the land.'

Mr. Lawes says gold has been discovered in the interior of New Guinea.

In *China*, gold is collected in the sands of the rivers in Yunnan and Sze-chuen, especially from the upper branch of the Yang-tze, called Kin-sha-kiang, or Golden Sanded River. The largest amount is said by Sir John Davis to come from Li-kiang-fu, near that river, and from Yung-chang-fu, on the borders of Burma. It is wrought into personal ornaments and knobs for official caps, and beaten into leaf for gilding. Silver also is brought from near the borders of Cochin-China; and the mines in that region must be both extensive and easily worked, to afford such large quantities as have been exported. It is found in the sands of the Min river in Sze-chuen, and in very many of the small streams in Chefoo in Shan-tung; the island of Hainan (Kiung-chau-fu), also Shan-king-fu and Lien-chau in Canton province, several places in Yunnan and in Kwei-chau, all yield gold.

In the *Japanese Islands*, gold-dust has been largely washed for; but that of the Sado district in the northern part of Niphon, and those of Surunga, and Satzuma, and Omura, and Tsi-kun-go, are mentioned as the most productive.

The information given here as to the diffusion of gold in the streamlets of Malabar, the Neilgherries, and Mysore, was also printed in the first and second editions of this Cyclopædia. It showed that the gold-washers were earning at most about 3d. a day, and offered no prospect of profit to skilled workers. But in 1877 to 1882, speculators formed 26 companies, with capital amounting to about £3,000,000, about half of which went to the sellers of estates. It is the second speculation that has occurred in the Madras Presidency since 1860, the first having been coffee. Gold there is, but, as yet seen, by no means sufficient to meet the heavy demands of skilled labour and machinery. The annual imports of gold into all British India from 1872 to 1882 has ranged in value from £1,443,712 in 1877, to £4,856,392 in 1882.

GOLD AND SILVER FILIGREE WORK. The native silversmiths of Cuttack have long been noted for the fineness, neatness, and lightness of their filigree work. This kind of work is executed for the most part, under supervision, by mere boys, whose nimbler fingers and keener eyesight are supposed to enable them to bring out and put together the minute patterns with more distinctness and accuracy than their elders can; comparative cheapness is perhaps another reason for their employment. The ruling rates for this filigree work are from two to two and a half rupees; that is to say, taking the first rate, two rupees or four shillings is charged for every rupee weight of finished silver work, namely, one rupee for workmanship and one rupee as the price of the silver. The filigree work in gold of Dehli and other places is famed. Next to muslins and embroidered fabrics, filigree work is that for which Dacca is most celebrated. The articles usually made at Dacca are ladies' ornaments, such as bracelets, ear-rings, brooches, chains, necklaces, etc., and attar-dans and small boxes for natives. The design best adapted for displaying the delicate work of filigree is that of a leaf. It should be drawn on stout paper, and of the exact size of the article intended to be made. The apparatus used in the art is exceedingly simple, consisting merely of a few small crucibles, a piece of bamboo for a blow-pipe, small hammers for flattening the wire, and sets of forceps for intertwisting it. The gold and silver filigree work of the Chinese equals any ever produced by ancient Venetian masters, and their chasing in silver is unrivalled. The art of enamelling on silver is also brought to great perfection in China, and specimens surpass any ever produced at Genoa.—*Sirr's China and the Chinese; Dr. Watson.*

GOLD AND SILVER WIRE. The drawing of silver and gold wire (*i.e.* silver wire covered with gold), used as thread in embroidery, is extensively carried on in several places, and Benares is celebrated for this art. There are several varieties of silver and gold thread (badla) made at Dacca, as kalabatūn for the embroidery of muslins and silks; goshoo for caps and covering the handles

of chowries; sulmah for turbans, slippers, and hookah snakes; and boolun, for gold lace and brocades. Some of it is drawn almost as fine as a hair. In the time of Aurangzeb, a quantity of this article was made yearly for the court at Dehli. A hundred sticks covered with it, and plain gold and silver badla to the amount of £2000 in value, appear among items composing the Malboos khas nazr, or present of royal clothing annually sent to the emperor. The Trichinopoly filigree work is as light and elegant as that of Malta or Genoa.—*Dr. Taylor.*

GOLD EMBROIDERY. Zardozi, HIND. The oriental races have ever been celebrated for their skill in this art of embroidery, which appears to have been practised in Assyria, and introduced from thence into India. Pliny, however, mentions that it was a Phrygian invention, and in Rome embroiderers were called Phrygiones. In Babylon, clothes were woven of different colours, and called Babylonica. During the early part of the middle ages, Europe obtained its most important embroideries from Greece and the east. Many of the sarees or women's cloths made at Benares, at Pytun, and Burhanpur, in Gujerat; at Narrainpet and Dhanwarum, in the territory of His Highness the Nizam; at Yeokla in Kandesh, and in other localities, have gold thread in broad and narrow stripes alternating with silk or muslin. Gold flowers, checks, or zigzag patterns are used, the colours of the grounds being green, black, violet, crimson, purple, and grey; and in silk, black shot with crimson or yellow, crimson with green, blue, or white, yellow with deep crimson and blue, all producing rich, harmonious, and even gorgeous effects, but without the least appearance of or approach to glaring colour, or offence to the most critical taste. They are colours and effects which suit the dark or fair complexions of the people of the E. Indies; for an Indian lady who can afford to be choice in the selection of her wardrobe, is as particular as to what will suit her especial colour—dark or comparatively fair—as any lady of Britain or France. India in this manufacture stands unrivalled, and it makes some very gorgeous shamianahs and elephant saddle-cloths. The gold and silver fancy fringes of Hyderabad are well known in India. Solid silver wire fringes and ornaments are made in Madura, but they are surpassed by the silver thread of Hyderabad.

In the embroidered fabrics of India, it may be mentioned as a principle, that patterns and colours diversify plane surfaces without destroying or disturbing the impression of flatness. They are remarkable for the rich diversion shown in the patterns, the beauty, distinctness, and variety of the forms, and the harmonious blending of several colours.

In Burhanpur, most of the people are dependent in one way or other on the wire-drawing and cloth-weaving industries of the place. The value of its fine fabrics depends mainly on the purity of the metals employed in the composition of the wire, and to secure this the wire-drawing has always been kept under Government inspection. A hereditary tester, called the chaukasi, received and assayed all the silver and gold brought to the taksal or mint (where the Burhanpur rupee was also coined), and here the wire was drawn out to a certain degree of fineness before being allowed to pass again into the hands of the manufacturers, an arrangement still continued by the British. The drawing takes place only at Burhanpur and Lodhipura, a suburb of the old city. The silver bars are covered with a thin gold leaf weighing from four to forty-two masha (of fifteen grains troy each) to each pasa, that is, from about half to six per cent. on the amount of the silver. The number of masha employed is called the rang (colour) of the wire. The adhesion appears to be effected purely by mechanical skill on the part of the workmen, called pasa tania. It is then passed by the same workmen through a series of holes in steel plates, of diminishing size, by manual power applied by means of a spoked wheel of the rudest construction. It is passed through forty of these holes before it leaves the taksal, and is then reduced to about the size of an ordinary sodawater wire. Thence it goes into the hands of another set of operatives, called tania, who still further reduce it through a gradation of forty more holes, the last of which is as fine as a human hair.

Their apparatus is of somewhat more delicate construction, but the work requires neither the same skill nor hard work as the first operation. The wire is drawn by them down to various degrees of fineness, according to the work for which it is destined. The round wire is then given to the chapria, who flatter it into an almost impalpable film, by hammering between two polished steel surfaces,—an operation requiring, it is said, superior skill. In this state it is termed badla, and is used for some few sorts of work. The greater part of it has, however, to be spun into a thread along with silk before being woven up. This is done by persons called bitai, who use no sort of apparatus for the purpose, excepting a couple of wooden spindles twirled by the hand. Indeed, the beauty of the result obtained by such primitive implements must strike every one with amazement. The layer of gold on the finest wire must be of almost inconceivable thinness. The mixed thread is called kalabatun, which is woven into the kimkhab and other brilliant fabrics worn by rich natives on high occasions.

The wire-drawers were originally Pathans, introduced from Upper India by the emperor Akbar, but now all castes work at the trade. The fabrics are of many different sorts, many of them of great beauty. Kimkhab (vulgarly kincob), which is of mixed silk and gold thread, is now little made in Burhanpur, the Ahmadabad and Benares articles, from being produced both cheaper and nearer the great markets for such stuffs, having driven it out of the field. The same may be said of mashroo, a fabric of silk warp with the woof of cotton thread, wrought with a pattern in kalabatun; though made to a small extent, it is greatly inferior to the produce of Ahmadabad. The chief fabrics still made in the city are zari, a very light rich stuff, in which the flattened wire is interwoven with silk in the warp with a thread woof, chiefly made up into scarves and sarees worn by females on wedding and other high occasions. Selari is half silk and half thread, with brilliant edging and borders of silk and gold thread, mostly in the form of sarees and do-pattas; pitambar, all silk with the same edging, is a better sort of the same. Turbans, sashes, etc., are made in all these fabrics. The gold thread also is much woven up with silks into rich borders and edgings, exported to be attached

to the cloth manufactures of other places. Silk for these cloths is all imported; it is mostly from China, generally spun and dyed in fast colours at Poona. A little, however, is spun in the city from the material imported raw. The cotton thread used is extremely fine, and is both English and made on the spot. The former costs in Burhanpur exactly one-fourth of the latter, but it is greatly inferior both in strength and cleanness. The closely-twisted native thread breaks with a sharp crack, while the English article, from its fluffy, open character, parts without any noise. The English thread, from its cheapness, has, however, supplanted the native for all but the finest stuffs. The city thread is spun by the families of the weavers and others, the best being produced by the Balahi or Dher caste. A coarser thread is generally spun throughout the country by the women of almost every caste. It is woven into every description of common cloth by the Burhanpur weavers, even the best of them, when out of fine work, having to take to the commoner stuffs. The latter now greatly preponderate in quantity. The supersession by the rough-and-ready Mahrattas of the luxurious Mahomedan princes and nobles, was probably the first blow to the trade. The average earnings of the weavers range from about five to ten rupees a month, besides what their families earn by spinning, dyeing, and odd work connected with the trade.

Among the manifold and various manufactures of China, the gold and silver tinsel cloths of Pekin stand deservedly in high estimation; their chief value arises from the peculiar property which they possess of never tarnishing or becoming discoloured.—*Dr. Watson; J. B. Waring, Masterpieces of Industrial Art, Exhib. of* 1862; *Williams' Middle Kingdom; Royle, Arts of India.*

GOLDEN FOOT, a title of the king of Burma.

GOLDEN ISLAND, or Chinsan, is in the middle of the Yang-tze-kiang, or great river of China, where the width is near three miles. It is the property of the emperor. It is interspersed with pleasure-houses and gardens, and contains a large monastery of priests, by which the island is almost entirely inhabited.—*Macartney's Embassy.*

GOLDEN LILIES, a translation of the name given to the cramped feet of the women of Chinese origin. It is not practised by the Hakka, a race of ancient Chinese stock who emigrated from Northern to Southern China about the 13th century; nor amongst the Manchu, nor amongst the hill tribes of Formosa.

GOLD FISH, Cyprinus auratus, seem to have long been known in China, and were introduced into Britain about the 15th or 16th centuries. They are seldom seen in India, but are very common in the Mauritius. They are supposed to be of accidental production, as they are not found wild, and their fins and tails greatly vary.

GOLDINGHAM, J., for many years the Honourable E. I. Company's astronomer at Madras. He gave an account of the monolith temples of Mahaballipuram in As. Res. iv. p. 407, and published Astronomical and Meteorological Observations, 3 vols. folio, 1827. He wrote on the Measuring the Length of the Seconds Pendulum at the Equator, ibid.

GOLD-LEAF. Kin-poh, CHIN. This is roughly made in China, and largely exported to India. In China suicides swallow it, as also gold-dust: these produce mechanical irritation and death. —*Smith.*

GOLD MOHUR, also called Ashrufee, a gold coin, value about fifteen or sixteen rupees.

GOLD, OXYMEL of. Kin-tsiang, CHIN. The Chinese regard this as an elixir vitæ.—*Smith.*

GOLDSMITH, one of the five artisan castes among the Hindus of India, the other four being the blacksmith, carpenter, brazier, and stone-cutter. These all wear the poitu, zonar, or sacred cord, and do not reverence Brahmans. Those in the Malabar country follow the rule of descent by the mother, and their women are polyandrists. In Western India they are distinguished by their country, as Marwari, Gujerati, Cutchi, or Dekhani, and work at ornaments worn by people of their respective castes or countries. The Cutchi are the best workmen. Usually the intending purchaser finds the gold or silver, and the artisan charges from three annas to two rupees and upwards per tola, according to the simplicity or richness of the design. A large number of articles in gold and silver are annually made at Bhooj. Gulabdan, or rose-water sprinklers, are manufactured for native use. The silver and gold used is very nearly pure. The charge is at the rate of 8 annas per tola weight.

GOLD-THREAD is largely used in the embroidery of India. There should not be any alloy whatever in the gold or gilt silver thread used. This alone can preserve it from tarnish; and as gold thread enters very largely into the patterns of most native cloths, it would be impossible to make any of high value acceptable without it. In its manufacture, a small bar, $\frac{1}{4}$ inch diameter and about 6 inches long, of the purest silver, is trebly or quadruply gilt by the highest touch gold; there is no alloy whatever used in the highest kinds, but the value of the thread depends upon the number of times the silver has been gilt with pure gold. The gilt bar is beaten out to a thick wire with carefully polished flat hammers, on a polished anvil, and afterwards drawn through a succession of holes in a plate, until the requisite fineness is obtained, which is hardly more, probably, than a fine hair. The wire is wound round upon reels, and is flattened by a delicate and peculiar manual operation as follows:—Three reels of wire are placed upright on the further side of a steel plate, perforated, through which the wire is drawn; the workman draws these wires towards him over a highly polished steel anvil, placed on a small stool, and as they pass strikes them sharply with a somewhat heavy hammer, the face of which is also perfectly flat and highly polished. The operation is very rapid, and must require great skill so as to ensure uniform flatness and perfection in the wire thus prepared for use. To make it into thread it is twisted upon silk thread of various degrees of fineness, as required, by a simple process as follows. The thread passes over a ring or hook a few feet above the operator, and is wound upon a spindle with a long shank which hangs near the ground. A rapid twist is given to it by the workman, by rolling it sharply on his thigh, and as it spins the gold thread is directed carefully along, so as to cover the whole exactly as high as the man can reach. The spindle is then stopped, the covered thread wound upon it, and the operation resumed. It is doubtful, perhaps, whether any mechanical

means would ensure such perfection as is attained by these simple manual processes, or whether they could ever be imitated by artisans unused to them.—*Exhib. of* 1851.

GOLEEREE, a pass in the Khaibar mountains; forms the great middle route from Hindustan to Khorasan by Dehra Ismail Khan and Ghazni. Crosses the Suliman range in lat. 32°.

GOLLA or Gollar, a race in India who are treasurers, cashiers.

GOLLA. Tel., Karn. A shepherd, grazier, or cowherd. A man of a caste whose duty it is to graze sheep or cattle. See Goala.

GOLLAR. This tribe or race are dwelling in the villages between Hyderabad and Poona, but a very considerable number dwell in Seroor, 10 miles from Kulburga. They call themselves Gol, from Go, a cow, also Hanam Gol; and they claim to be of the Dhangar or cowherd race. The people know them as Adavi Gollar, *i.e.* country or wild Gollar; also as Bai-mandel-wanloo, also Dowai Darman and Dowa dene wala, alluding to their profession. The men are herbalists, collecting roots and plants for the native physicians, but they are unwilling to communicate any of their knowledge. The young and the women beg. Their physical appearance is strikingly like the races from Rajputana,—about the same in colour, but more slender and not so tall. None of them resemble any of the races of Southern India. They speak in Urdu, Teling, and Canarese. They wear ochre-dyed clothes; do not eat the cow or bullock, but eat the goat, sheep, hare, and other creatures.

GOLOKA, the highest world, residence of Krishna; perhaps Go-loka, the cow-place.

GOLUK, a Hindu race in Woon.

GOLUNDA ELLIOTTI. *Jerd.* Bush rat.

Mus hirsutus, *Elliot.*	Mus coffæus, *Kelaart.*
Gulandi, ... Can.	Sora-panji-gadur, . . Tel.
Daddo-weddeo, . Singh.	Gulat-yelka of Waddar.

The Golundi, one of the Muridæ, is found in Southern India and Ceylon. The tail is naked and scaly, somewhat villose. The colour is an olive-brown above. It lives entirely in the jungle, choosing its habitation in a thick bush, among the thorny branches of which, or on the ground, it constructs a nest of elastic stalks and fibres of dry grass, thickly interwoven. The nest is of a round or oblong shape, from 6 to 9 inches in diameter, within which is a chamber about 3 or 4 inches in diameter, in which it rolls itself up. Around and through the bush are sometimes observed small beaten pathways, along which the little animal seems habitually to pass. Its motion is somewhat slow, and it does not appear to have the same power of leaping or springing, by which the rats in general avoid danger. Its food seems to be vegetable, the only contents of the stomach that were observed being the roots of the hurriali grass, Cynodon dactylon. Its habits are solitary (except when the female is bringing up her young) and diurnal, feeding during the mornings and evenings. In Ceylon it ocasionally commits much damage, seemingly to get the bark, for they do not appear to eat the coffee berries. With their long sharp incisors they bite off with great smoothness the smaller and younger branches, generally an inch from the stem; and should the plants be quite young, just taken from the nursery, they bite them right off a few inches from the ground, and carry them to their nests. Their food in the jungles is a species of Strobilanthus, called Nilu or Nilloo in Singhalese, and the rats only issue from their forest residence and attack the coffee estates when their forest food fails. They invade the coffee plantations in swarms, gnaw off the young branches, and divest the trees of buds and bloom. So many as a thousand have been killed in one day on a single estate. Like the lemming of Norway and Lapland, they migrate in vast numbers on the occurrence of a scarcity of their ordinary food. The Malabar coolies are so fond of their flesh, that they evince a preference for those districts in which the coffee plantations are subject to their incursions, where they fry the rats in cocoanut oil, or convert them into curry.—*Nietner; Tennant's Ceylon; Elliot.*

GOLUNDA MELTADA. *Gray.*

Mus lanuginosus, *Elliot.*	Metta-yelka, . . . Tel.
Kera-ilei, ... Can.	Mettade of . . Waddar.

The soft-furred field rat lives entirely in cultivated fields, in pairs or small societies of five or six. In 1826, owing to a deficient monsoon, they appeared in multitudes, and destroyed the seed-grain and grain in the ear. The ryots employed the Waddara to destroy them, but thousands were killed without diminishing their numbers. They are eaten by the Waddara race. It has only been found in Southern India.

Dr. Kelaart describes G. newera as occurring in Ceylon.—*Elliot.*

GOMAL, a pass at the head of the Gomal valley, in lat. 32° N., long. 70° 30′ E., and about 100 miles long. It runs 20 miles from the entrance of the road to the N.W., then 80 miles S.W., then N.W. to Ghazni. This pass is of great commercial importance. Every spring large caravans traverse it from Hindustan to Afghanistan.

GOMASHTA. Hind. An overseer, an agent, an accountant.

GO-MEDHA. Sansk. From Go, a cow, and Medha, flesh. A cow sacrifice.

GOMEZ. Lorenzo de Gomez, a Portuguese, was the first of the European navigators who approached the northern part of the island of Borneo. He arrived there in 1518 in the ship *St. Sebastian*, on his route to China. He gave to the country the name of Burne, but he says that the natives term it Brannai or Brunai. The people have, however, no general name for the island.

GOMPHIA ANGUSTIFOLIA. *Vahl.*

Walkera serrata, *Willd.*	G. Zeylanica, *D.C.*
Ochna Zeylanica, *Lam.*	G. Malabarica, *D.C.*
Pua-jetti, . . . Maleal.	Jokati, ... Tam.
Bokaara-gass, . Singh.	

This tree grows to the height of 30 feet on the continent of India and in Ceylon, and is common up to an elevation of 3000 feet. The wood is useful for building purposes. The root and leaves are bitter, and employed in Malabar in decoction, in milk or water, as a tonic, stomachic, and anti-emetic.—*Thw. Zeyl.* i. p. 71; *O'Sh.* p. 269.

GOMPHRENA GLOBOSA. *Linn.*

Ma-hnyo-bau, . . Burm.	Gul mukhmul, . . Hind.
Jafferi gundi, . . Dukh.	Lal-gul, ... ,,
Everlasting flower, Eng.	Pedda goranta, . . Tel.

This flowering plant has a red and white variety, and the red resembles red clover. It is cultivated in gardens.—*Roxb.; Mason.*

GOMTI, a small perennial stream of Mewar,

which rises in the Aravalli mountains, and flows near Udaipur. It was dammed across by the rana, and the great Kankraoli Lake formed, 12 miles in circumference, at a cost of one kror and fifteen lakhs of rupees.

GO-MUKHI. HIND. A bag used by Hindu devotees; it contains a rosary, the beads of which are counted by the hand. Literally the two words mean cow's mouth.

GOMUTI. MALAY.

Makse, ... AMB.	Cabo-negro, . . . SP.
Duk or Dok, . . . JAV.	Anu, ... SUM.
Iju, Siji, . . . MALAY.	Scho, ... TER.
Sagwire, . . . PORT.	

The Tree.

Nawa, ... AMB. | Anao, Areng, Indro, MALA.

Gomuti is a fibrous horsehair-looking substance, produced at the base of the petioles of the Arenga saccharifera, and superior in quality, cheapness, and durability to that obtained from the husk of the cocoanut. It has great power in resisting wet, and is used by the natives of the Indian islands for every domestic and naval purpose to which cordage is applied. The coarser parts are used as pens by all the tribes who write on paper, and as the arrows for blow-pipes or arrow-tubes. Gomuti, of all vegetable substances, is the least prone to decay; it is fastened like straw over bamboo thatch round the ends of posts placed in the ground, is mixed with mortar, and is plaited by the Bornoese into ornaments for the arms, legs, and neck. Gomuti fibre is in Europe occasionally heard of by the name of vegetable bristles, but only a portion of the fibres may be likened to stiff bristles, the greater part being more like black horsehair. Dr. Roxburgh, writing in the year 1799, strongly recommended the extensive introduction of this palm into India; and the Arenga now grows in Bangalore, and to some extent in the Nuggur division of Mysore. The palm-wine and the sugar it yields, the black fibres for cables and cordage, and the pith for sago, independently of many other uses, are objects of commercial importance. This palm is to be found in all the Asiatic islands, especially in low moist situations, and along the banks of rivers. The native shipping of all kinds are entirely equipped with the cordage of the gomuti. It undergoes no preparation but that of spinning and twisting,—no material similar to tar or pitch, indispensable to the preservation of hempen cordage, being necessary. The best gomuti is the produce of the islands farthest east, as Amboyna and the other spice islands. That of Java has a coarse ligneous fibre; the produce of Matura is better. Gomuti is generally sold in twisted shreds or yarns. Besides the horsehair-like fibres, there is at the base of the leaves a fine gossamer-like woolly material, Baru, MALAY, Kawal, JAV., much employed in caulking ships, as stuffing for cushions, and as tinder. Eju was sent to the London Exhibition of 1851. The bundles of the coarse and fine fibres were about six feet in length, and about twelve inches in diameter, neatly tied up with split cane. Interspersed among the coarser were some finer fibres, something like black wool. The sinnet is coarse, but strong, and broke with a weight of 85 lbs., when coir of about the same size broke with 75 lbs.; but the comparison was not very exact. Besides making strong and durable cordage, the eju fibre is no doubt applicable to a variety of purposes for which horsehair and bristles are now employed.—*Royle, Fib. Pl.; Seeman on Palms; Voigt; Roxburgh; Morrison's Comp. Desc.*

GONA, also Gonapat. HIND. Gunny; a coarse canvas or sackcloth made from the Corchorus capsularis (pat) and C. olitorius, of which the gunny sacks, cordage, and paper are made.—*W.*

GOND, the province of Gondwana, on the old maps was bounded on the S.W. and W. by the Godavery, Pranhita, and Wardha rivers, and the Kaligong Hills; the Nerbadda separated it from Malwa and Dumoh, and then the boundary line ran N.E. along the Kutne, and on the N.E. side it had Berar and Chutia Nagpur. On the E. and S.E. it extended at least to a line drawn from Gangpur on the Brahmini to Bhadrachalam, about 120 miles from the mouth of the Godavery, and included Sumbulpore, Sonpur, and Patna; but on Hamilton's map of 1820 it includes Kalahandi, Boad, and Singbhum. Its length from S.W. to N.E. was not less than 380 miles, and its average breadth fully 300, whilst its area was at least 115,000 square miles. Gond tribes are scattered over the mountain ranges of this territory, though they do not extend quite so far to the E. as it does. They are found extending into Sirguja on the N.E.; they are found in Karial and Kalahandi or Kharond, along with the Khand and Uriya. In the south, says Mr. Hislop, they form the mass of the population of Bastar, and a portion of the inhabitants of Jeypore (in the Madras Presidency), while they occupy the hills along the left bank of the Godavery, about Nirmul; and on the west they are intermingled with Hindus of Berar for 30 miles from the right bank of the Wardha. The chief remaining sites of the aboriginal tribes of Central India is the Satpura plateau, divided among the British districts of Baitul, Chhindwara, Seoni, and the higher half of Mandla. Commencing from the west, one-half of the population of Baitul is Gond; in Chhindwara, the proportion is as high as three-fourths; in Seoni, which is traversed by the main line of communication through the plateau, it sinks to one-third, rising to one-half in the wild district of Mandla, where the last Gond kings held sway. To the east and west of this region, hill races of a different stock press in upon the Gonds, Kurku, Bhil, Baiga, Kol, and Dhangar.

The name Gond or Gund, says Mr. Hislop, seems to be a form of Kond or Kund. Both forms are most probably connected with Konda, the Telugu equivalent for a mountain, and therefore will signify the Konda-wanlu, hill people. And this name they must have borne for many ages, for we find them mentioned by Ptolemy, the geographer (A.D. 150), under the name of Gondaloi. But it has also been supposed to be a contraction of Govinda, literally cow-keeper. Of their history we know but little. Under all changes they appear to have preserved their own forms of worship and social habits; but some have adopted to a greater or less extent the forms of Hinduism, and a still fewer number have become Mahomedans. The Rajputs from Malwa seem to have pushed their conquests into the country and intermarried with them. Their descendants are still known as Rajputs or Gond Rajputs. They established governments, one of which ruled the Nerbadda valley, and had its capitals at Mandla and

at Garha, near Jubbulpur. It was founded by Jadu Rai, who succeeded his father-in-law Nagdeo, the Gond raja of Garha (A.D. 358). Mandla was conquered by his descendant, Gopal Sa, A.D. 634. Sungram Sa, the 47th in descent from Jadu, inherited only three or four districts in 1480; but at his death, in 1530, he ruled over fifty-two. Ferishta tells us that when Asof Khan invaded Garha in 1563, Bir Narayan was raja. Hirdi Sa, the 54th raja, built the temple at Ramnagar, near Mandla; and Seoraj, the 59th, began to reign in 1742, when Balaji Baji Rao invaded the country. A second kingdom had its seat on the southern slope of the Satpura Hills, at Deogarh in Chindwara, one of the rajas of which, Bakht Baland, was either taken prisoner by one of Aurangzeb's generals, or visited Dehli of his own accord, where he was converted to Mahomedanism, and then permitted to return to his country, where his descendants, says Mr. Hislop, though adhering to this change of creed, have not ceased to marry into Gond families, and hence the present representative of that regal house is not only acknowledged by the whole race about Nagpur as their head and judge, but is physically regarded a pure Raj Gond. A third Gond principality had its capital at Kherla in Baitul, to which belonged the famous forts of Gawilgarh and Narnalla. In 1433, its raja, Narsingh Rai, who is represented as powerful and wealthy, was slain in battle by Hushang Ghori, king of Malwa, and Kherla taken. At a later date it appears to have become subject to Pandu Gauli, the raja of Deogarh, and continued so under his successors. Not far from Kherla we find a hill raja at Saoligadh in Aurangzeb's time, who seems to have maintained his independence till swept away by the Mahrattas between 1760 and 1775. A fourth Gond kingdom was that of Chanda on the Wardha, which extended far to the east and south-east. The four dynasties arose before the ascendency of the Moghuls in India, and have left architectural and other monuments of great interest. The principal architectural remains are at Mandla, at Garha near Jubbulpur, at Chauragarh near Narsingpur, at Deogarh near Chindwara, at Kherla near Baitul, and at Chanda. But besides the preceding kingdoms, there was also a Gond Rajput dynasty at Warangal or Orankal in the Dekhan, to the south of the Godavery, which is said to have been founded by Kakati of the Ganapati family about A.D. 1088. The kingdom became very powerful about the end of the 13th century, and the raja of Orissa, becoming jealous of his neighbour's power, solicited the aid of Ala-ud-Din, who sent an army in 1303, through Bengal, to attack Warangal; but his expedition failed. Malik Kafur was then despatched with 100,000 horse into the Dekhan, and, after a siege of some months, he took Warangal in 1309, and made the raja, Ladder Deva, tributary. In 1321 it was again besieged by Alif or Jema Khan, the son of Ghaias-ud-Din Taghalaq, but he was obliged to retreat with the loss of nearly his whole army. He returned, however, and in 1323 reduced the place, and carried the raja prisoner to Dehli. It is said he was afterwards released and restored; at all events Warangal reasserted its independence in 1344, and assisted Hasan Ganga, Bahmani, in his revolt. From this time the Bahmani kings of Kulburga involved the native rajas in continual wars. Firoz Shah (1397-1422) especially obtained great successes over the raja of Kherla; and finally Ahmad Shah, Wali, took permanent possession of Warangal, forcing the raja to relinquish his ancient capital and flee northward across the Godavery, where he established himself in wild independence among the inaccessible forests. The Gond rajas still maintained their independence, however, and in 1513 we find them joining in a powerful confederacy on the side of Medon Rai against Muhammad [illegible] of Malwa. At the close of the 16th century, Akbar reduced the western portion of Gondwana, but it was not till the middle of the 18th that permanent progress was made. About 1738, Raghuji Bhonsla interfered in a disputed succession in Deogarh, and secured half the revenues; but in 1743 the Gonds raised an insurrection, which Raghuji quelled, and annexed the principalities of Deogarh and Chanda to his own dominions; and in 1751-52 he took the forts of Gawilgarh, Narnalla, and Manikdrug, with the districts dependent on them.

From this period large numbers of Mahrattas settled in these districts, the Gonds became more restricted to the hills, and they do not now form any considerable part of the population of the plain or champaign country. They predominate from Sirguja westward along the line of the Satpura Hills, through all the hilly country of the districts of Mandla, Jubbulpur, Seoni, Chandwara, Baitul, and Hoshungabad, and in some degree to the neighbourhood of Asirgarh. The Gond of Berar is a hill race, occupying the Mailghat and the southern skirts along with the Andh, the Kolamb, and Kurku. All these have a physical resemblance, but each of them speaks a different tongue, and in their features they are quite distinct from the people of the villages. There are 8000 of them in the Amraoti district. In the Central India Provinces the chief Gond tribes are:—Bhatra Gond, Mari Gond, in Chanda; Mariah or Gottawar, Upper Godavery; Khutolwar, in Chanda; Durweh, of Chanda; Aguriah, of Mandla; Hulba, of Upper Godavery. Their numbers have been variously estimated up to two millions, partly under feudatory states, as Bastar, Hyderabad, etc., and partly under the British Government, in the Central Provinces.

The Gonds divide themselves into twelve and a half castes, viz. Raj Gond, Raghuwal, Dadare, Katulya, Padal, Dholi, Ojhyal, Thotyal, Koilabhutal, Koikopal, Kolam, Madyal, and an inferior sort of Padal as the half caste. The census of 1881 names nine of them—Raj Gond, Pardhan, Kolam, Koilabhute, Darwe, Thakur, Bucheria, Boye, and Thoti. The first four, adds Mr. Hislop, with the addition, according to some, of the Kolam, are comprehended under the name of Koitor,—the Gond par excellence. This term, in its radical form Koi, is the name given also to the Meriah sacrificing tribes of Orissa, and to the wild tribes skirting the left bank of the Godavery from Rajamundry to near the mouth of the Indrawati. The Persian word Koh, a hill, approaches this more closely than even the Telugu Konda. The Koitor, as a rule, resent with no small vehemence the imputation of belonging to any portion of the Hindu community. The first three classes generally devote themselves to agriculture; the fourth includes those who have begun to conform to the Hindu religion and ape Hindu manners. The Padal, Pathadi, Pardhan,

or Desai, called Raj Pardhan to distinguish them from the Mahrati-speaking half-caste,—who play on wind instruments of brass, and spin cotton thread,—are the religious counsellors or bhats of the upper classes. The Dholi are musicians; and a subdivision of them in jungly districts are employed as goatherds. The Ojhyal are wandering bards and fowlers. The Thotyal (*i.e.* maimed) or Pendabarya, 'minstrels of God,' are also called Matyal, because their songs are chiefly in honour of Mata, the dreaded goddess of smallpox. They make baskets also. The Koilabhutal are the third wandering caste, and their women are dancing girls. They follow their profession chiefly among the Hindus, it being reckoned disreputable by the people of their own race. The Koikopal, *i.e.* Gondi Gopal, are a settled class devoted to cow-keeping. The Madya, called Jhodia in Bastar, are savages on the Beila Dila Hills, and in the remoter parts of Chanda. The only clothing the women wear is a bunch of leafy twigs fastened with a string round their waists, to cover them before and behind. In this they resemble the Juangar to the south of the Kol country, the Chenchi near the Pulicat Lake and to the north of Ellore, and till about A.D. 1830 a similar custom existed among the Holier near Mangalore. The Kolam extend along the Kandi Konda or Pindi Hills, on the south of the Wardha river, and along the table-land stretching east and north of Manikgadh, and thence south to Danttanpalli, running parallel to the right bank of the Pranhita. They do not intermarry with the common Gond, but the one attend the nuptials of the other, and eat from their hands. Connected with the Gonds, though not included in the preceding classes, are the Madiya between Chindwara and the Mahadeva Hills, who have conformed to the Hindus in their language and some religious observances; the Halwa, pretty numerous in Bastar, Bhandara, and Raipur, who covet the distinction of wearing a sacred thread,—a privilege, till recently, sold to those in Bastar by the raja; the Gaiti Gonds in Bastar, who call themselves Koitor; the Moria Gonds, who are the principal agriculturists in Bastar; and the Naikude Gonds, inhabiting the jungles on the banks of the Pain-Ganga, and especially the tracts between Digaras and Umarkhed, and found about Aparawa-pet, and as far as Nirmul, who have adopted the Hindu dress, and will not eat beef; but they live by the chase, or cut wood and grass, and have been a terror to their neighbourhood by their depredations.

Quite distinct in language at least from the Gond tribes, are the Kur or Muasi and the Korku to the N.W. and W. of the Mahadeva Hills. Of the latter of these, Mr. Elliot gave interesting details in the second number of the Journal of the Antiquarian Society of the Central Provinces. They belong to the Kol or Munda family.

The Gond religion is as distinctively of Scythian origin as is their language and physique. Earthenware figures of the horse are offered instead of the living sacrifice. They propitiate the manes of their ancestors by offerings of these earthenware horses, rice and other grains, eggs, fowls, or sheep. The sacrifice of the cow was prohibited by the Bhonsla government. Children everywhere, and many adults, are buried, but the Madia of Bastar and the Gond races who have conformed to Hindu customs burn their dead. They have in all about thirty divinities, but two of these, Barra Dewa and Dula Dewa, are most worshipped. The Creator, under the name of Bhagwan, is occasionally worshipped in their houses by prayers, and by burnt-offerings of sugar and ghi, but their chief worship is to the inferior divinities; these are—

1. *Badu Dewa* (great god) or *Budhal Pen* (old (god), who is the same as the Bura Pen of the Kond race, and appears to be the same as Rayetal, or the sun-god, represented by an iron tiger three inches long; and is probably the same as the Marung Bura of the Santal. He is worshipped once a year, at the rice harvest, and a hog is then sacrificed to him. Among the Gaiti he is represented by a copper piece, kept in a tree in the jungle. This they take down at the annual festival, clear a space of about a foot square under a tree, in which they lay the pice, before which they arrange as many small heaps or handfuls of uncooked rice as there are deities worshipped by them. The chickens brought for sacrifice are loosed and permitted to feed on the rice. Goats are also offered, and their blood presented in the same manner. On the blood arrack is poured as a libation to their deities. The pice is now lifted and put in its bamboo case, which is shut up with leaves wrapped in grass, and returned to its place in the tree, to remain there till it be required in the following year. Both Budhal and Matya (about to be noticed) are said to be sometimes of iron, and a foot long.

2. *Matya*, called *Mata* by the Kurku, is both the god (or goddess) of the much-dreaded scourge smallpox and of the town. The Gond of Sconi represent Matya as the attendant or kotwal of Budhal Pen, and they offer him a pig. The Kurku suppose Matya to reside inside the village, and they make offerings of cocoanuts and sweetmeats, but no blood.

The Gond have no images in their houses, and at their religious ceremonies they employ only the rudest symbols,—knobs of mud, stone, iron rods, pieces of wood, chains, bells, etc. Their festivals are associated with their crops, and are celebrated under the saj tree or eim tree three or four times in a year, as on the occasion of the commencement of rice sowing, when the rice crop is ready, and when the mahwa tree (Bassia latifolia) comes into flower. In the south of the Bandara district are to be seen squared pieces of wood, each with a rude figure, carried in front, set up somewhat close to each other. These represent Bangaram, Bangara Bai, or Devi, who is said to have one sister and five brothers, the names of the latter being Gantaram, Champaram, Naikaram, and Potlinga, the sister being known as Danteswari, which is a Hindu name of Kali. These are all deemed to possess the power of sending disease and death upon men, and under these or other names seem to be generally feared in the region east of Nagpur city. At Dantewada, in Bastar, about 60 miles S.W. of Jagdalpur, near the junction of the Sankari and Dankan tributaries of the Indrawati, is a shrine of Danteswari, at which, about 1835, it is said that upwards of 25 full-grown men were immolated on a single occasion by a late raja of Bastar. Since then numerous complaints have reached the authorities at Nagpur of the continuance of the practice, and up to 1883 the conduct of the ruling raja continues

unsatisfactory. Amongst the Moria Gond, Bhawani is worshipped as the smallpox goddess, and as Maoli or Danteswari.

3. *Sale* or *Sali*, or, according to the Gaiti Gond, Saleng, sits on the same gadhi with the great god, to whom he is said to be nearly equal. An offering of a she-goat is made to him, and he is probably the protector of cattle.

4. *Gangara*, Ghagara, Gagaral, Gongara Mal, is the bell god, and is represented by a bell, or by an iron chain of four links.

5. *Palo*, of whom only the name is known. The suitable offering to Gangara and him is a cow.

6. *Gadawa* is the god of the dead, and is perhaps the same as Chawar, and identical with Dichali of the Chaibassa Kol.

7. *Kham* or *Kank*, the last of the seven deities (Sat dewala), is worshipped under the saj tree (Pentaptera tomentosa.)

Kodo Pen is besides these seven, and is the horse-god, common to the Gond and Kur. Mr. Driberg supposes him to preside over a village, and thus he would correspond to Nadzu Pen of the Kond. But Mr. Hislop conjectures he may be the god of crops, Kodo, the Paspalum frumentaceum, being the grain chiefly cultivated by the Gond. In the wilder villages near the Mahadeva Hills, Kodo Pen is worshipped by new comers near a small heap of stones, through the oldest resident, with fowls, eggs, grain, and a few copper coins, which become the profits of the officiating priest.

Mutua or Mutya Dewa, among the Kurku, is a heap of small stones inside the village, besmeared with sandur, red lead. He is associated with the prosperity of the village, and is worshipped with a goat, cocoanuts, limes, dates, and a ball of sandur paste.

Pharsi Pen or Pharsa Pot is represented by a small iron spear-head. This name may possibly be connected with Barchi (Hindi), a spear; and he may be identical with the Loha Pen of the Kond, the iron god or god of war. Pharsa, in Gondi, also means a trident, which is an ancient Tartar weapon. He is worshipped every third or fourth or fifth year, at full of the moon Vaisakh, and on the occasion people assemble from great distances, and offering is made of a white cock, a white he-goat, and a white young cow. The ceremonies are conducted with great secrecy, and no Hindu or Gond woman even is allowed to be present. He is apparently the same as Dula Dewa, the god of the battle-axe of the Gaiti Gonds, who represent Dula Dewa by a battle-axe fastened to a tree. While Barra Dewa requires the sacrifice of a living animal, a fowl, a goat, a pig, on public occasions, Dula Dewa is a household god, to whom at all times rice, flowers, and oil can be offered.

Hardal, at Amarkantak, is worshipped as the cholera god; but Mr. Hislop supposed this to be another name for Budhal Pen. The Kurku style him Lala Hardal, and he possibly is the same as the Gohem of the Chaibassa Kol.

Bangaram is probably the god of fever, as among the Kol of Chaibassa, where he is associated with Dichali and Gohem, as also with Chondu, the god of itch, and Negra, of indigestion.

Bhiwasu or Bhim Pen is, in the Mahadeva Hills, the god of rain, where a festival lasting for four or five days is kept in his honour at the end of the monsoon, when two poles, about 20 feet high and 5 feet apart, are set up, and a rope attached to the top, by means of which they climb to the top of the pole, down which they then slide. Offerings of fowls, eggs, and grain are presented to him. All over Gondwana he is generally worshipped under the form of an unshapely stone covered with vermilion, or of two pieces of wood standing from three to four feet above ground, like those set up for Bungaram. Before these the Moria Gond regularly perform worship previous to sowing. A little S.W. from Bajar Kurd, however, and north of Parsemi, is a formed idol of Bhiwasu, 8 feet high, with a dagger in one hand and a barchi (javelin) in the other. A Bhumuk is the pujari or officiating priest, and the people worship on Tuesdays and Saturdays, making offerings of hogs, he-goats, cocks, hens, cocoanuts. At an annual feast the potail gives two rupees, and Hindu cultivators rice; the pujari takes a cow by force from the Gowar and offers it to Bhim Sen, in presence of about twenty-five Gonds.

Sasarkund is a pool in the Mahur jungle, where the Pain-Ganga is said to be engulfed. The Naikude Gond repair there, in pilgrimage, at the month Chaitra, to a huge stone that rises in a gorge, and goes by the name of Bhim Sen, before which Naikude Gond mingle with Raj Gond and Kolam in worship. Towards evening the worshippers cook a little rice, and place it before the god, adding sugar. Then they smear the stone with vermilion and burn resin as incense; after which all offer their victims, sheep, hogs, and fowls, with the usual libations of arrack. The pujari appears to be inspired, rolls his head, leaps wildly about, and finally falls down in a trance, when he declares whether the god has accepted the services or not. At night, drinking, dancing, and beating tomtoms goes on, and in the morning they return home after an early meal. Those unable to leave home perform similar rites beneath a mahwa tree.

Waghoba, the tiger god, is worshipped by the Naikude Gond, and under the name of Bag Deo by the Kurku.

Sultan Sakada is worshipped by the Kur.

Sakal Deva or Sakra Pen, the chain god, is worshipped in Seoni and elsewhere.

Sanyal Pen or Sanalk, the spirits of the departed, are worshipped or propitiated for a year after death; but persons of note, headmen of villages, or priests, are treated as gods for years or generations, and sacrifices are usually offered at their sthapana or shrines of earth.

The Gonds of Mandla have the Lamjina Shadi, in which the betrothed lad serves an apprenticeship for his future wife. A Gond girl, however, may exercise her own will and run off with a man; but it is quite allowable for her first cousin or the man whom she has deserted to abduct her from the man whom she has chosen. The Shadi Bandhoni is a compulsory marriage. In the Shadi Baitho, a woman goes to a man's house. Widows remarry either to a younger brother of their deceased husband, or to some other man.

To burn dead men is deemed the most honourable mode of disposing of the remains; women are always buried. When the father of a family dies, if well to do, they clothe the corpse in a new dress, and bury or burn the remains; his spirit is supposed to dwell in the house till it be released. Till released, the spirit is the only object of worship in the house. After the funeral, a piece of turmeric and a pice are tied up in a cloth and suspended to

one of the beams of the house. When the time comes to lay the spirit, the cloth is removed, and, with a portion of the flesh of a goat or a pig, is offered to the village deity. A feast is given to the relatives and elders, and the release is complete.—*Central Provinces Gazetteer; Sir Walter Elliot, in Journal Ethn. Soc.; Coleman, Myth. Hind.* p. 297; *Latham's Ethnol.; Mr. Logan, in Jo. Ind. Arch.*, 1853, p. 201; *Malcolm's Central India*, i. p. 361; *Dalton's Ethn. of Bengal; Mr. (Sir George) Campbell, Ethn. of India, in Jo. B. As. Soc.; Report of Ethn. Committee of the Central Provinces*, 1868, p. 7; *Rev. Mr. Hislop's Notes; Wilson.*

GONDA, a town in Oudh, in lat. 27° 7′ 30″ N., and long. 82° E., is 28 miles from Faizabad. It gives its name to a revenue district with a population over a million. The great cultivating castes are the Ahir, 122,106; Kori, 110,916; and Kurmi, 92,321. The Kahar, mostly servants and palanquin bearers, number 44,978. The Barwar are a predatory tribe of Hindus.—*Imp. Gaz.*

GONDANA. Mahr., Karn. Called also Gondli or Gondhal. A tumultuous assembly in honour of the Hindu goddess Devi, celebrated in Mysore by Mahratta Brahmans, with music, dancing, and the recitation of mythological stories, the performers being a low caste named Gondhali, who sing and dance. In some places the Gondhali is the village drummer; sometimes he is a vagrant musician, dancer, etc. In Berar, also, the Gondhali is the village musician.—*W.*

GONDAR, the capital of the Amhara kingdom, stated by Heuglin (1862) to have contained from 6000 to 7000 inhabitants, but it is said to have been totally destroyed by the emperor Theodore.—*Par. Paper.*

GONDNI. Hind. Cordia angustifolia, C. obliqua, and C. Rothii. The fibre of the bark is made into rope. The fruit of C. angustifolia is an orange-coloured, sweet, and rather mucilaginous berry.

GONDOPOLA. Uria.? A tree of Ganjam and Gumsur, extreme height 45 feet. Bandy wheels and ploughshares are occasionally made of the wood.—*Captain Macdonald.*

GONG or Loo, a musical instrument of the south and east of Asia, composed of a mixed metal resembling bronze in appearance. It is in the form of a large flat basin, with a ridge, and when beaten with a mallet, covered with woollen cloth or twist, emits a strong reverberating or ringing bell-like sound. Its value is in proportion to the quantity of metal it contains. In China, gongs are suspended at the doors of courts of justice, where applicants for justice attend and sound. The gongs of China are made of mixed metals,—in 100 parts, copper, 82; tin, 17; iron, 1; nickel, traces. The metals are melted in a crucible, and poured out on an iron mould with a clay rim, and hammered while still red. The gongs are hard, but brittle, and are struck with a padded bamboo and gradually brought to the full sound. The Kayu kutoh of the Malay is a wooden gong. It resembles the teponaztli of the Mexican Cordilleras.—*Crawfurd; Burbidge.*

GONI. Hind. Gunny. Goni cloth, gunny of Crotalaria juncea.

GONIKAR. Hind. A low caste employed to gather the areca nut from the gardens of the husbandmen in Mysore.—*Wils. Gloss.*

GONIOTHALAMUS HOOKERI. *Thw.* A middle-sized tree of Ceylon, at Hinidun and Reigam Corles, at about 1000 feet. G. Thwaitesii, *H. F.*, and T. caloocaara, not uncommon in the central province, at an elevation of 2000 to 4000 feet.—*Thw. Zeyl.* pp. 6, 7.

GO-NYEN. Burm. A vine producing a pod 3 or 4 feet long, containing 10 or 12 beans, 10 inches in circumference. These beans, well boiled, are sometimes used for food.—*Malcom*, i. p. 182.

GONZALES. Ruy Gonzales de Clavijo, an officer of the court of Henry III., king of Castille, went to Samarcand as an ambassador in 1403, and returned A.D. 1408.

GONZALEZ de Mendoca (Jo), author of a History of China, published at Rome A.D. 1585, at Antwerp 1596. It was translated into Italian and published by M. Fr. Avanzo at Genoa in 1586, and put into French by L. de la Porte, Paris 1600.

GONZALEZ. Sebastian Gonzalez de Tibao arrived in Bengal in 1605, where he engaged in the salt trade, but took to piracy, and commanded a fleet of pirate ships; seized Sundwa in the Sunderbuns. He had a large force, and frequently ravaged Arakan and the Sunderbuns. He married the sister or daughter of the king of Arakan, but after a chequered career he sank into obscurity.

GOOAL or Kowar. Hind. A cereal which, in the N.W. Provinces, is frequently sown with cotton, and given as fodder to cattle.—*Elliot.*

GOODA, also Goora. Hind. A temporary place of refuge; hence the designation of many towns in India.—*Tod's Raj.* i. p. 298.

GOOGA or Goga. In the Lower Himalayas of the Panjab there are many shrines to this mythological being. In one account he was a chief of Ghazni, who was slain in war against his brothers Urjun and Surjun, but a rock opened, and Goga sprang forth armed and mounted. Another account makes him the lord of Durd-Durehra, in the wastes of Rajwara, who died fighting against the armies of Mahmud.

GOOGUL, Hind., is met with in all the bazars of India. It much resembles myrrh; and is said by some good authorities to constitute the bulk of the article exported from Bengal as East Indian myrrh. Royle considers the Googul identical with the b'dellium of commerce, and he ingeniously traces in Budleyun and Madelkhon, the Greek synonyms of Googul, the βδελλιον and μαδελχον of Dioscorides. A tree in the Saharunpur garden, pointed out as the Googul tree, had scaly bark exactly conformable to Dr. Roxburgh's description of his Amyris. Dr. Ainslie (i. p. 29) adduces as synonyms of b'dellium, Kukul, Tam., Googulu, Tel., Googul, Can., Hind., Aflatun, Arab., and Mukul, Pers. He describes the gum-resin as semi-pellucid, yellowish, or brown; inodorous and brittle; softening between the fingers; in appearance not unlike myrrh, of bitterish taste, and rather strong smell. He stated, however, that it was all brought from Arabia and from Persia, where the tree is called Darakht-i-mukul, but in the bazars of India it is said that the Googul comes from the hills.

Under the term Googul, however, the resinous exudations of several trees seem to be classed. Under the Canarese and Mahratta names Dhoop and Googul, Dr. Gibson mentions two species of Canarium, one in Canara and Sunda, on the ghats above, and the second species of great size

cultivated near Bilgil and at Siddapore. The choice gum-resins afforded by these trees are extensively used in the arts, and exported both inland and to the coast. Several plants undoubtedly yield the b'delium of Scripture, and amongst others Balsamodendron Roxburghii, *Arn.*, B. pubescens, *Stocks*, of Sind, B. Mokul, *Drury*, B. glabra, *W. and A.*, B. Africanum of Senegambia.

Olibanum is produced from species of Boswellia, described by Avicenna, evidently referring to the λιβανος of Dioscorides, who mentions both an Arabian and an Indian kind. The latter, Mr. Colebrooke proved to be the produce of Boswellia serrata, *Roxb.* (B. thurifera, *Colebr.*), the Salai or Saleh, GOND., of the Hindus, common in Central India and Bundelkhand, especially about the Bisrumgunge ghat. It is probably also produced by B. glabra, which has the same native name, and though extending to a more northern latitude, is distributed over many of the same localities. To this kind, according to Dr. Ainslie, the term Googul is applied by the Telugu people. The resin of both species is employed as incense in India. Central India alone furnishes the greatest portion of the Indian olibanum of commerce, as it is chiefly exported from Bombay.—*W. Ill.*; *Roxb.*; *O'Sh.* p. 287; *Royle, Prod. Res.*; *Ainslie*; *Gibson*; *Birdwood.*

GOOGUL, a fibre supposed to be obtained from the Isora corylifolia, the Valumbri-kaya of the Tamil language.

GOOHA. SANSK. A secret place, from Gooh, to hide or cover; hence Goohya, requiring to be concealed. See Guhya.

GOOR. DUKH. Jaggary, HIND.; Nulla vellum, TAM.; Bellum, TEL. A coarse sugar obtained from the sugar-cane and the various palm wines, particularly that of the Phœnix dactylifera. Twelve pints of the sap are boiled down to one of goor, and four of goor yield one of good powder sugar. It is not sugar, nor is it molasses, but both together.—*Simm.*

GOOR. Bahram Goor was famous for his liberty, gallantry, and love of the chase. He was the monarch whom the Greeks and Romans styled Varanes, and was the fourth monarch of the family. The famous impostor Mani, founder of the sect of Manichæans, made his appearance in this king's reign, and was put to death by the king. Bahram Goor is said to have visited India in the fifth century, and to have left progeny there by a princess of Kanouj. See Gor.

GOORAKOO, Goodakoo, or Goodak, HIND., called in Bengal Tambaku, the name given in the Peninsula of India to the compound of tobacco for the hookah; from Goor, raw sugar, and Akoo, TEL., leaf.—*Herklots.*

GOOSE.

Wazzat, ...	ARAB.	Anser, ...	LAT.
Gans, . . .	DUT., GER.	Gansi pato, . . .	PORT.
Oie, ...	FR.	Ghus, ...	RUS.
Cheu, ...	GR.	Hansa, ...	SANSK.
Kaz, ...	HIND.	Ganso, Ansar, . . .	SP.
Oca, ...	IT.	Gas, ...	SW.

In its position in natural history, the goose is of the order Natatores, tribe Lamellirostres, and family Anseridæ, comprising the Anserinæ or true geese, Cereopsinæ or N. Holland geese, Plectropterinæ or spurred geese, Nettapodinæ or anserine teal, and the shieldrakes or Tadorninæ. The goose was domesticated in ancient times; it is mentioned in Homer, and was kept in the Roman capital B.C. 328, sacred to Juno. There are three or four closely-allied wild species, but the prevailing belief is that the wild grey-leg goose is that from which the domestic breeds have come. The A. albifrons may have crossed. The rock goose, Bernicla antarctica, does not seem to have crossed. With the Egyptians, the egg of the goose was the emblem of Seb or Chronos (Bunsen). The goose was deemed the bird of wisdom in ancient Europe; in Asia it was the symbol of stupidity.

Anser cygnoides is domesticated in China.
A. cinereus (A. ferus), 'Grey-leg goose' of Europe and Asia, is common in India. The domestic goose of India is a hybrid between A. cygnoides and A. cinereus.
A. brachyrynchus, 'Pink-footed goose,' of Europe, N. Asia, and Panjab (rare)?
A. albifrons of Europe, N America, N. Asia, and Panjab.
A. Indicus, *Blyth*, 'Barred-headed goose' of North and Central Asia; visits India in the cold weather.
Bernicla ruficollis (A. ruficollis), 'Red-breasted goose,' of N. Asia chiefly; rare in N. India.

The pied goose of Australia is Anseranas melanoleuca. The maned goose of Australia is Bernicla jubata; blackbacked, A. melanonotus.—*Darwin; Bunsen; Burton's Scinde; Hooker; Catal. Cal. Museum.*

GOOSEBERRY.

Guldum, ...	BHOT.	Uva spina, ...	IT.
Stikkelsbær, . .	DAN.	Kryzhovink, . .	RUS.
Groseille verte, . .	FR.	Groselle, ...	SP.
Stachelbure, . .	GER.	Stickelbar, ...	SW.

The European gooseberry grows in the Himalaya, but does not thrive or give much fruit. The Himalayan gooseberry is the Ribes grossularia, *Linn.*, or rough gooseberry; is not uncommonly wild in the arid parts of the Upper Sutlej, Chenab, Jhelum, and in Tibet, at from 8000 to 12,000 feet, and was seen by Dr. Bellew near the Safed Koh, at about 10,000 feet; but its fruit is small and intensely sour, and hardly ever eaten even by the natives. Ribes uva-crispa is the smooth gooseberry. The country gooseberry of the Peninsula is the Cicca disticha, *Linn.*; its fruit, the size of a gooseberry, is round, succulent, and subacid; is eaten raw, and made into pickles and preserves, and is cooling and wholesome. The fruit of Zizyphus jububa is also so named. The Cape gooseberry, Physalis Peruviana, is a perennial herb, widely cultivated in tropical and subtropical countries. The fruit is much esteemed for tarts, preserves, etc. As a preserve it is remarkable for its viscous or glutinous substance, rich deep golden colour, and peculiar quite sui generis flavour.—*Lowe's Madeira Flora.*

GOOTHOOBI. BENG. One-headed cyper-grass, Anosporum monocephalum.

GOOTY, a town and hill fort in the Bellary district of the Madras Presidency, 48 miles from Bellary, in lat. 15° 6′ 53″ N., long. 77° 41′ 32″ E. In 1758 it was taken by Morari Rao, who subsequently capitulated to Hyder Ali and disappeared. It was besieged and taken by General Bowsar from Tipu's Killadar in 1799. Two large tanks are near the town. Sir Thomas Munro, governor of Madras, died of cholera near Gooty, at Putticonda on the Adoni road, and was temporarily interred here. Population, 6730.

GOP, also Gopa, Gopala, also Kop. HIND. A

herdsman. Gopi, a herdwoman. From Go, SANSK., a cow. Immense numbers of the Ahir or Gopa of Northern India still cling to the nomadic life of their ancestors. Seeking the high grazing grounds of Central India and Western Bengal, they form encampments on the pasture lands, where they reside with their wives, families, and herds, till the grass in the neighbourhood is exhausted, subsisting entirely on the proceeds of their milk and butter. The houses they use are constructed of large bamboo mats; they can be taken to pieces and removed like tents. A large section of the tribe have settled down as farmers, and are only distinguishable from other agriculturists by a possession of larger herds of cattle, by the greater care bestowed on them, and in profiting more by the sale of butter and milk. As the Doljatra festival begins on the 14th day of the light half of Phalgun, or about the middle of March, the image of Krishna is put into a swing at dawn, noonday, and sunset. The caste of Gopas or cowherds is everywhere prominently conspicuous in this ceremony, especially so amongst the Uriya; and they renew their own garments and all the harness equipments of their cattle. They also bathe them, and paint their foreheads with sandal and turmeric.

The race known to Europeans as Goala in Singbhum and the adjoining Tributary Mahals of Katak (Cuttack) and Chutia Nagpur, especially in Keonjhar, are the most flourishing of the peasantry, though the Bhuiya or Kol are the dominant races. In Behar there are several subdivisions, as Bhota, Bunarusya, Kanoujia, and Choutaha. It is pronounced as Gwal. The Sadgop, literally chief or superior Gopa, are now more an agricultural than a pastoral race. The Gareri are a shepherd race, to which the Gackwar belongs.—*Dalton's Ethnology of Bengal*, p. 314; *Elliot*.

GOPADITYA, the successor of Deva Twashta, and grandson of king Yudishtra.

GOPALA and Govinda, common names of Krishna. Gopala is from Go, a cow, and Pala, nourishing; a herdsman. See Chaitanya; Krishna; Rudra Sampradayi.

GOPAMOW, a town in Oudh, from which the Nawabs of the Karnatic came. Anawar, the father of Anwar-ud-Din, died there; his son, Anwar-ud-Din, was killed in battle at Ambur. Anwar-ud-Din's son, Muhammad Ali, died at Madras in 1795. Muhammad Ali's son, Oomdut-ul-Umra, died 1801. Azim-ud-Dowla, the nephew of Oomdut-ul-Umra, succeeded, and died in 1818. His son, Azam Jah, died 1824; and the last nawab, Muhammad Ghous, died 1855. The family were then designated with the title of Prince of Arcot.

GOPANG, a Baluch tribe in Dehra Ghazi district.

GOPASHTAMI, the eighth day of the light half of the month Kartik (Oct.—Nov.), when cattle are fed, and decorated with garlands in commemoration of Krishna's passing his youth among the cow pastures of Brindavan. On this day, as well as on the Godhun (Govardhun), the day after the Dewali, garlands are suspended from the necks of cows; their horns, hoofs, and bodies are painted; and salutations are made to them. The whole ceremony reminds us of that observed on St. Anthony's day at Rome, when the beasts are sprinkled with holy water, and blessed by priests, as Elliot in Supplementary quotes:—

'Yet to me they seemed crying, alack and alas!
What's all this white damask to daisies and grass?
Then they're brought to the Pope, and with transport they're kissed,
And receive consecration from Sanctity's fist.'

GOP CHANDANA, a common magnesian clay, used by Hindus to make the sectarian marks on their faces, breasts, and arms. Vaishnava Hindus employ a white earth from Dwarka, said to be the soil of a pool in which the Gopi drowned themselves on hearing of the death of Krishna. It is also described as an aluminous yellow earth, brought from the Ganges at Hardwar, and used to mark the foreheads. It is also given in medicine.—*Gen. Med. Top.* p. 131. See Tripundra; Vibhuti.

GOPESWARA and Barahat are two towns in Garhwal, from which were received two bronze tridents, respectively 21 and 16 feet high, with an inscription in semi-barbarous Sanskrit without date. In the more recent inscription on the Gopeswara trident, the invocation is Aum Svasti; and the spot is called sacred to Mahadeva. The tridents are precisely of the form of the trident on the Indo-Scythic coins, with the axe attached to the shaft. The oldest inscriptions—which, however, from the form of the Deva Nagari, cannot be before the 7th century—are in relief upon the shaft, and make no mention of Mahadeva or Hinduism; but the more recent are cut into the trident, which must have been taken down to admit of the incision. In one of these is the Aum and the name of Mahadeva, which had no association originally with the tridents.—*J. B. As. Soc.* v. pp. 347 and 485.

GOPHER WOOD, of which the Hebrew ark was built, is supposed by some to be the wood of Cupressus sempervirens, or common cypress. But some commentators have supposed this term to be squared or planed wood; others the cedar, others pitched wood.

GOPI or Gopin, a milkmaid, a herdwoman, generally applied to designate the herdwomen of Brindrabhan or Vrij, the native country of Krishna, with whom Krishna associated while a young man. Radha, daughter of Nanda, a pastoral chief, was Krishna's first and favourite love, and the stories of his Gopi life are much read by the Hindus. It is said that on one occasion, when the girls went to bathe in the river, Krishna stole away their clothes from off the river bank; and up to the present day, the Vrijma women, when they go to bathe, like the Gopi of old, leave behind their garments on the steps of the ghat, and make a rush to the water, thus giving a colouring of truth to the story. Gopini are the Gopi herdwomen. It is believed that the Rasmandala is typical of the zodiacal phenomena,—that the nine Gopini are the personifications of the Nouragini, the nine nobles of music, or the Nourasa, the nine passions, excited by the powers of harmony. There is much in the Hindu mythology that is founded on an astronomical basis,—much that perpetuates the early Vedic worship of the elements under a figurative garb.—*Tr. Hind.*

Gopi-Nat'ha. SANSK. A name of Krishna, from Gopi, the wife of a milkman, and Nat'ha, a lord.

GOPURA, also called Gopuram, a gate, a town gate; in Hindu temple architecture, the tower over the porch. There are numerous beautifully sculptured gateways attached to the larger

temples of the Hindus. On days of festivals, the figures of the deities are brought out of the temples through the Gopuram, and placed in small open temples called Mantopa, to receive the adoration of the multitude.—*Cole. Myth.*

GOR, PERS., and Gad'ha, HIND., mean the wild ass; and Bahram, the Varanes of the Greeks, was surnamed Gor from his partiality to hunting that animal. Various authorities state that Bahram Gor entered India in the 5th century, and left progeny by a princess of Kanouj.

GOR, a celebrated tribe, amongst the most illustrious of the Chauhan feudatories. A branch, until latter years, held Soopur, and about nine lakhs of territory. The Gor tribe was once respected in Rajasthan, though it never there attained to any considerable eminence. The ancient kings of Bengal were of this race, and gave their name to the capital, Luknowti. Colonel Tod has no doubt that the Gor appanage was west of the Indus, and that this tribe on conversion became the Ghor. Ferishta writes concerning the proselytism of all the Afghan tribes; but Colonel Tod is of opinion that the Afghans are converted Jadoon or Yadu, not Yahudi or Jews.—*Annals of the Bhatti; Tod's Rajasthan.*

GORAH BUNDAR river flows between lofty hills, beautifully wooded, and studded here and there with antique ruins, and huge masses of dark rock. The river abounds with crocodiles.—*Postans' Western India*, i. p. 179.

GORAL. HIND. A clan of Rajputs in the Agra district.—*Wilson.*

GORAKH or Gorakhnatha, the founder of the sect of Kan-phata Jogi. He was contemporary of Kabir, and was personally known to him, and, like Kabir, Gorakhnath is peculiarly an Oudh saint. The chief seat of his teachings was at the town of Gorakhpur, named after him; and he was the founder of the numerous sect of the Jogi or Kan-phata Jogi, who in Oudh, in 1868, numbered 8642. Gorakhnath's teaching, like that of Farnanand, was addressed to the people, and his followers may be of any caste. His chief tenet was the possibility of acquiring even in life entire command over elementary matter, by means of certain ascetic practices. This state is called Yoga or Joga, and the method of acquiring it is taught by the Patanjala school of philosophy.—*J. Charles Williams; Oudh*, p. 121.

GORAKHNATHA, at Gorakhpur, is a temple, which, according to local tradition, was founded by Siva, in the second of Treta age. It was converted by Ala-ud-Din into a Mahomedan mosque. It was subsequently rebuilt in another place, but again appropriated by Aurangzeb to the Mahomedan religion, but subsequently restored. It is the most celebrated of the temples of the Jogi sect.—*Wilson.* See Jogi or Yogi; Naga Kuli.

GORAKHPUR, in lat. 26° 42′ N., long. 83° 23′ E., a town on the right bank of the Rapti, in the N.W. Provinces of British India, which gives its name to a revenue district lying between lat. 26° 5′ 15″ and 27° 28′ 25″ N., and between long. 83° 7′ and 84° 29′ E., with an area of 4578 square miles, and a population in 1872 of 2,019,361 persons. Among the inferior castes, the Ahir are the most numerous, numbering 242,383 souls; but the Chamars nearly equal them, with a total of 210,108. The western part of Kosala—that is, Gorakhpur—continued some time under the Cherú, after other portions of that territory had fallen into the hands of the people called Gorkha (hence Gorkhapur, Gorakhpur?), who were in their turn expelled by the Tharu, also from the north. The Tharu have left numerous monuments in Gorakhpur, and a few of them still remain in the district and in Mithila. They claim to be of the family of the sun, *i.e.* the Aryan, but are said to have strongly-marked Mongolian features. One of the rajas of this dynasty had for his chief priest a man named Rasu, of the impure tribe of Musahar. In Shahabad, also, the most numerous of the ancient monuments are ascribed to the Cherú, and it is traditionally asserted that the whole country belonged to them in sovereignty. Buchanan suggests they were princes of the Sunaka family, who flourished in the time of Gautama, about the 6th or 7th century before the Christian era. The Cheru were expelled from Shahabad, some say by the Savara or Sura, some say by a tribe called Hariha, and the date of their expulsion is conjectured to be between the 5th and 6th centuries of the Christian era. Both Cheru and Savara were considered by the Brahmans of Shahabad as impure or M'hlechas, but the Hariha are reputed good Kshatriyas.

The overthrow of the Cheru in Mithila and Magadha seems to have been complete. Once lords of the Gangetic provinces, they are now found in the Shahabad and Behar districts only, holding the meanest offices, or concealing themselves in the woods skirting the hills occupied by their cousins the Kharwar, but in Palemau they retained till a recent period the position they had lost elsewhere. They invaded that country from Rohtas, and, with the aid of Rajput chiefs, the ancestors of the Thakurai of Ranka and Chainpur, drove out and supplanted a Rajput raja of the Rakshail family, who retreated into Sirguja, and established himself there. It is said that the Palemau population then consisted of Kharwar, Gond, Mar, Korwa, Parheya, and Kisans. Of these, the Kharwar were the people of most consideration. The Cheru conciliated them, and allowed them to remain in peaceful possession of the hill tracts bordering on Sirguja; all the Cheru of note who assisted in the expedition obtained military service grants of land, which they still retain. It is popularly asserted that at the commencement of the Cheru rule in Palemau they numbered 12,000 families, and the Kharwar 18,000; and if an individual of one or the other is asked to what tribe he belongs, he will say, not that he is a Cheru or a Kharwar, but that he belongs to the 12,000 or to the 18,000, as the case may be. The Palemau Cheru now live strictly as Rajputs, and wear the poita or caste thread. They do not, however, intermarry with really good Rajput families. Intermarriages between Cheru and Kharwar families have taken place.—*Dalton, Ethnol. of Bengal*, 126; *Imp. Gaz.*

GORA-LOG. HIND. Literally, white people; a term applied to Europeans by natives of India, who call themselves Kala-log, or black people, also Kala-admi, black man.

GORAM, a group of three islands in the Eastern Archipelago. S.E. of Goram is a high group, composed of raised coral reefs 300 or 400 feet, with a volcano on the island of Teor, which broke forth in 1659. In the Goram group, at Manowolko, east of Ceram, a slight infusion of Papuan

on a mixture of Malay and Bugi has produced a good-looking people. The Goram people are wholly traders. Every year they visit the Teninber, Ke, and Aru Islands, the whole N.W. coast of N. Guinea from Oetanata to Salwatty, and the islands of Waigyu and Mysol. They also extend their voyages to Tidore, Ternate, Banda, and Amboyna. Their prahus are all built by the Ke islanders, who annually turn out hundreds of neat boats. The Goram people trade in trepang, medicinal Mussoi bark, wild nutmegs, and tortoiseshell, which they sell to the Bugi traders at Ceram Laut and Aru. —*Wall.* ii. pp. 53, 60; *Bikmore*, p. 243.

GORAYAT. HIND. The village watchman of Hindustan. See Pasban.

GORDI, a fine race of Central India. Their features and manners show them to be decidedly Aryan, of a type less alloyed than that of most castes. The old remains of former greatness, so common in Central India, especially the curious cairns and stone circles, are attributed to them.—*Sir G. Campbell, J. F. S.*

GORDONIA FLORIBUNDA. *Wall.* The A-nan-pho and Theet-ya of the Burmese. A conspicuous tree of Moulmein, Chappedong, Tavoy, and Martaban. There is some difference between the Tavoy and Moulmein trees; that of Moulmein has leaves precisely like G. obtusa, with shallow serrature, but the leaves of the Tavoy tree are quite entire, and the Burmese have different names for them. The compact timbers of Gordonia floribunda and Gordonia integrifolia are called itch-wood by the Tavoyers, from the itching which the chips or bark occasion when brought in contact with the skin. The timber is used for house-posts, and for rice mortars.—*Mason.*

GORDONIA OBTUSA. *Wall.*

Gordonia parviflora, *W. Ill.* | Nagetta, NEILGHERRIES.

This very beautiful tree is very common on the Neilgherries, the Wynad, and throughout the Western Ghats of the Madras Presidency, from 2500 to 7500 feet elevation. Its timber is white, with a straw tint, even-grained, and pleasant to work, and not unlike beech. It is very generally in use for planks, doors, rafters, and beams, but warps if not well seasoned.—*Beddome, Fl. Sylv.*

GORDONIA SPECIOSA. *Thw.* Garria speciosa, *Gardn.* A large tree, 40 to 50 feet high, rather uncommon, in damp forests of the central province of Ceylon at an elevation of 5000 feet and upwards.—*Thw. En. Pl. Zeyl.* i. p. 40.

GORDONIA WALLICHII is a common tree in the Eastern Himalaya and in Sikkim; much prized for ploughshares and other purposes requiring a hard wood. It is the Sing-brang-kun of the Lepcha, and in Sikkim ascends to 4000 feet. Oaks at this elevation occur as solitary trees, of species different from those of Darjiling. There are three or four oaks with a cup-shaped involucre, and three with spinous involucres enclosing an eatable sweet nut; these generally grow on dry clayey soil. Gordonia Wallichii is an erect and singularly handsome tree. It ascends 4000 feet on the mountains. In very dry soils it is replaced by sal (Vateria robusta), and more rarely by the Pinus longifolia.—*J. As. Soc. Bengal*, No. xxix. p. 425; *Hooker, Him. Jour.* i. p. 157.

GORDONIA ZEYLANICA. *Wight.*

Var. *a.* lanceolata. | Var. *b.* elliptica.

Grows in forests of the central province of Ceylon, at an elevation of 4000 to 7000 feet.—*Thw. Zeyl.* i. p. 40.

GORGARI. HIND. In Chutia Nagpur, a method of settling village boundary disputes. The watchmen of the two villages are buried up to the waist in two holes, and whoever holds out longest is the victor.—*W.*

GORGHEN, a river which rises in Kurdistan, and, after a course of 120 miles, falls into the Caspian. The Yomut Turkoman occupy its valley. —*Collett, Khiva* (*C. Asia*).

GORI, a dynasty that ruled at Mandu, in Malwa.

Sultan Dilawar governed the province from	A.D. 1387
but assumed independence	1401
Sultan Hoshang Gori, ...	1405
Ghazni Khan, ...	1432
Mahmud Khan, contemporary of Rana Khumbo of Chittore, ...	1435
Ghaias-ud-Din, ...	1469
Mahmud II., ...	1512
Malwa incorporated with Gujerat, . . .	1534
Malwa annexed by Akbar, ...	1568

GORIWAR, an agricultural tribe in the Northern Circars.

GOR-KHAR, or wild ass, Equus onager, has been often confounded with the Kiang or wild horse, E. hemionus; it inhabits chiefly the rather hilly districts of Baluchistan, part of the sandy plains of Sind; and another animal is to be found to the westward of Baluchistan, in Persia, which is called Kulan (Equus hemippus). Dr. Barth has mentioned that, according to the description given to him, he thinks the asses he saw in Africa identical with the Gor-khar, or wild asses of Sind and Baluchistan. The Gor-khar is also called Khar-guddha. Though an inhabitant of the Sind desert, it most abounds in the southern part, about Dhat, and the deep rooè which extends from Barmair to Bankasirr and Buliari, along the north bank of the Great Runn or Salt Desert.—*Tod's Rajasthan*, ii. p. 328. See Kiang.

GOROWA, a Hindu caste who wear the janava, yotnai, poitru, SANSK., and claim to have a gotra. They are styled saiva Brahmana. They worship the lingam as Siva or Mahadeo. They are engaged in all civil avocations, and as agriculturists; are never soldiery. They are of a bamboo-yellow colour, and are burly men. They do not know where they came from, but reside in the Western Dekhan. Qu. Gurao?

GOROWLI, a feudatory chieftaincy in Bundelkhand, with an area of 50 square miles, a population of 5000 souls, and a revenue of Rs. 15,000.

GORRE CHIMIDI. TEL. Andrographis echioides, *Nees.* The name means sheep's mucus, the whole plant being very viscous. Gorre pentika, Leea, *sp.*, signifies sheep's droppings.

GOSAIN, Goswami. From Go, SANSK., sense or passion, and Sen, master. One who masters or restrains his passions; modified vernacularly, as Gosain. Sects of Hindus, whose disciples are styled Gosami, Sami, Swami, Gosali, Goseavi, Gosayi, etc. A religious mendicant in general. As a special name, it is applied to very different classes of persons, identified only by their professing a religious and mendicant life. The most respectable are the reputed descendants spiritually of Sankaracharya, of whom there are ten chief branches, and who are thence also called the Das-nami, or ten-named Gosains, attaching to the ordinary Hindu appellation one of the terms,—

Tirtha, or shrine; Asrama, an order; Vana and Aranya, a wood; Saraswati, the goddess of eloquence; Bharati, the goddess of speech; Puri, a city; Giri and Parvata, a hill; Sagara, the ocean;—as Awanda-gir, Vidyananya, Puran-gir, Rama-asrama. These, although they are occasionally vagrants, are usually assembled in maths, or conventual residences under a superior. Some of their establishments are liberally endowed, and of great reputed sanctity, particularly that of Sringeri in the Western Ghats, near the sources of the Tungabhadra, said to have been founded by Sankara himself. Individuals of the three pure castes are admissible, and in some cases Sudras also; but as they profess celibacy, their numbers are in part recruited by the purchase or adoption of boys at an early age.

The Das-nami Gosains worship preferentially Siva, of whom Sankara is said to have been an avatara, but many have been distinguished as advocates of the Vedanta doctrines. One division of them, termed Atits, differs from the more rigid Dandi Gosains, in following secular pursuits as traders and ministrant priests of temples. Some of them marry and settle, when they are termed Samyogi or Gharbhari. These Gosains, although met with in Upper India, are most numerous and influential in the south.

In Hindustan the term is more correctly applied to two different classes, both worshippers of Vishnu,—the Gosains of Gokul, who are descended from Valabhacharya, and, although religious characters, are allowed to marry and follow secular pursuits; and the Gosains of Bengal, who are the disciples of Chaitanya, a native of Bengal, who instituted a new form of Vaishnava worship at the end of the 15th century. They also marry, and, like the Gokulashta, lead domestic and respectable lives. The term is also applied loosely to mere vagrants, some of whom wandered about formerly in armed gangs, and levied contributions forcibly on the villages, plundered them; or now, coming singly or in small bodies, extort money by inflicting disgusting tortures upon themselves; these sometimes go naked.

Gosavin, female Gosain, MAHR., one who, on arriving at years of discretion, adopts a life of continence and mendicancy.

Dauri Gosavi, MAHR., a class of religious vagrants said to be disciples of Gorakhnath, in which case they are not properly Gosains but Jogis. They sing hymns in honour of Bhairava, playing on the daura, or a small drum shaped like an hour-glass, whence their name Dauri, a player on the daura.

The ceremony observed at the initiation of a Gosain is as follows. The candidate is generally a boy, but may be an adult. At the Siva-ratri festival (in honour of Siva), water brought from a tank, in which an image of the god has been deposited, is applied to the head of the novitiate, which is thereupon shaved. The guru, or spiritual guide, whispers to the disciple a mantra or sacred text. In honour of the event, all the Gosains in the neighbourhood assemble together, and give their new member their blessing; and a sweetmeat called laddu, made very large, is distributed amongst them. The novitiate is now regarded as a Gosain; but he does not become a perfect one until the Vijaiya Hom has been performed, at which a Gosain famous for religion and learning gives him the original mantra of Siva. The ceremony generally occupies three days in Benares. On the first day the Gosain is again shaved, leaving a tuft on the top of the head, called in Hindi Chundi, but in Sanskrit Shikha. For that day he is considered to be a Brahman, and is obliged to beg at a few houses. On the second day he is held to be a Brahmacharya, and wears coloured garments, and also the janeo or sacred cord. On the third day the janeo is taken from him and the chundi is cut off. The mantra of Siva is made known to him, and also the Rudri Gayatri (not the usual one daily pronounced by Brahmans). He is now a full Gosain or Wan-Parast, is removed from other persons, and abandons the secular world. Henceforth he is bound to observe all the tenets of the Gosains. The complete Gosains who have performed the ceremony of Vijaiya Hom are celibates. It is customary, therefore, for men not to perform it until they are forty or fifty years of age, as it involves the abandonment of their wives and families. Gosains will eat food in the houses of Brahmans and Rajputs only. At death their bodies are not burned, but are either buried or thrown into the Ganges.

The Vaishnava Gosai observe none of the Hindu festivals except those of Krishna; but the anniversaries of the deaths of their founders are observed as such. They do not, says Mr. Ward, reject the mythology or the ceremonies of the Hindus, but they believe that those of Hari (Krishna) only are necessary. On the nights of their festivals, the initiating incantation may be heard resounding through the stillness of the night: 'Hari, Krishna; Hari, Krishna; Krishna, Krishna; Hari, Hari; Hari, Ram; Hari, Ram; Ram, Ram, Hari, Hari!'

In Northern India, the Vaishnava Gosain worshippers of Vishnu, called Gokul Gosai, followers of Valabhacharya, marry and follow religious pursuits; and in Bengal, Gosai who follow the doctrines of Chaitanya also marry.

Vaishnava Byragi and Saiva Gosain have occasionally come in conflict, and at Hardwar, on the Ganges, a celebrated place of pilgrimage, soldiers of the Bengal army had to keep the peace, long after a battle that occurred, about the middle of the 18th century, in which they fought almost to extirpation. The descendants of Nityananda are Gosains of Khurdah. The descendants of Adwaita are Gosains of Santipur, and there the principal idol is Shamchand. But one-third of the people of Santipur are Vaishnava.

The Gosai of Gujerat worship Siva. They wear orange-tawny clothes, and the tilak or sectarian mark upon their foreheads is horizontal.

The priests of Eklinga are Gosain or Goswami. The high priest and his order are celibates, and the office is continued by adopted disciples. Of such spiritual descents they calculated 64 since the sage Harita, whose benediction obtained for the Gehlot Rajput the sovereignty of Chittore when driven from Saurashtra by the Parthians. A numerous class of Gosains have adopted celibacy, who yet follow secular employments both in commerce and arms. The mercantile Gosains are amongst the richest individuals in India, and at Udaipur were thus useful when the Mahrattas demanded a war contribution, as their privileged character did not prevent their being offered and

taken as hostages for its payment. Gosains who profess arms, partake of the character of the knights of St. John of Jerusalem. They live in monasteries scattered over the country, possess lands, and beg, or serve for pay when called upon. As defensive soldiers, they are good. Siva, their patron, is the god of war, and, like him, they make great use of intoxicating herbs, and even of spirituous liquors. Mewar could always muster many hundreds of the Kanp'hat Jogi, or 'split-ear ascetics,' so called from the habit of piercing the ear, and placing therein a ring of the conch shell, which is their battle-trumpet. The poet Chand gives an animated description of the body-guard of the king of Kanouj, which was composed of these monastic warriors. The Rana of Mewar, as the diwan or vicegerent of Siva, when he visits the temple, supersedes the high priest of Eklinga in his duties, and performs the ceremonies. The shrine of Eklinga is endowed with twenty-four large villages from the fisc, besides parcels of land from the chieftains.—*Tod's Rajasthan; Tr. of Hind.; Cole. Myth. Hind.; Rasamala, Hindu Annals*, ii. pp. 312; *Elliot, Sup.; Wilson's Glossary; Sherring's Hindu Tribes and Castes*, p. 257.

GOSHA. Hind. Concealed. A Gosha woman means a woman who carries out the Mahomedan law of concealing herself from the sight of men, except certain near relatives. Many Hindu women, however, follow this rule. A Mahomedan ascetic is called a Gosha Nashin, who has withdrawn from the world and become an ascetic, or who lives a recluse life. It means sitting in a corner; and the term is applied to a woman of rank or respectability, though the term for her is properly Gosha, or Parda, Nashin.

GOSHOO. Hind. Gold thread used to embroider caps.

GOSSYPIUM, cotton plant.

Gossypion, ... Gr.	Karpasa, . . . Sansk.
Kapas ka jhar, . Hind.	Punji, ... Tam.
Carbasus, ... Lat.	Patti chettu, . . Tel.

The genus Gossypium, belonging to the natural order Malvaceæ and its species, from the hair or wool which surrounds their seeds, are, next to food plants, the most important of the vegetable kingdom. Taking the population of British India and allied states at 250 millions, and allowing 10 pounds of raw cotton per man annually, the produce and yield of this plant annually exported may be taken at about 22 million cwt. There are several recognised species. De Candolle admits 13, and notices others. Two others were described by Dr. Roxburgh, one by Reeusch, and another in the Flore de Senegambie. Of varieties, Mr. Bennett says that he knows more than one hundred kinds, and they appear to him never ending. Dr. Royle was of opinion that the species may be reduced to G. Peruvianum (G. acuminatum), G. Indicum (G. herbaceum), G. arboreum, and G. Barbadense. Baron Fred. von Mueller (1880) notices as species —G. arboreum, *Linn.*, the tree cotton; G. Barbadense, *Linn.*, West India or Sea Island cotton, with its tall Egyptian variety called Bamia cotton; G. hirsutum, *L.*, upland or short-staple cotton; G. religiosum, *Linn.* (G. Peruvianum, *Cavan.*), kidney cotton, Peruvian or Brazilian cotton; G. Taitense, *Parlatore* (G. religiosum, *Banks* and *Solander*), and G. tomentosum, *Nuttal* (G. Sandvisense, *Parlatori*, G. religiosum, *A. Gray*).

There can be no doubt that the cotton plant is indigenous in America, and the species of the old world appear to be Indian and Chinese. Cloth manufactured from cotton has been brought from the tombs of Peru; and cotton seeds have been obtained by Rosselini from the monuments of Thebes. The Sanskrit name Karpasa has been taken into different tongues. The Hebrew word Karpas of the book of Esther (i. 6) and the Latin Carbasus are derived from it; and the Karpasus mentioned in the Periplus of Arrian has been rendered by Dr. Vincent fine muslin. Pliny (lib. xix. c. 1) mentions the cultivation in Upper Egypt of a small shrub, called by some Gossypion, by others Xylon, bearing fruit like a nut, from the interior of which a kind of wool is produced. The species of the cotton plant grow in the warm tropical regions of America and Asia, but they are likewise extra-tropical; and Baron Humboldt mentions having seen it growing at 5500 feet in Mexico, and 9000 feet of elevation in the equinoctial Andes. It is largely grown in China. Dr. Royle mentions that it is cultivated in small quantities at 4000 feet of elevation in 30° N. in the Himalaya; and Dr. Stewart tells us that it is grown in many places all over the Panjab as a hot-weather crop, ripening up to Christmas, and that it is cultivated up to the Kashmir valley (5000 feet), but the quality does not appear first rate.—*Roxb.; Dr. Stewart's P. Pl.* p. 27; *Cleghorn, Report, Br. Ass.; Eng. Cyc.; Royle, Prod. Res. of Ind.; Von Mueller.*

GOSSYPIUM ACUMINATUM. *Roxb.* The Brazil or Pernambuco cotton.

Wa-ku-la, . . . Burm. | Pamidi patti, . . Tel.

This species is indigenous, growing in the mountains of Bengal and in Malacca. It is not cultivated; but as the wool is separated easily from the seeds, it is very desirable to make trial of it in agriculture.—*Roxb.; Royle; Voigt.*

GOSSYPIUM ARBOREUM. *Linn.* This tall perennial species, Nu wa, Burm., tree cotton, is found in Celebes and in every part of India. It is noticed among lists of the plants of Arabia, and also of Egypt. It is the New Orleans cotton (G. sanguineum, *Hassk.*). According to Dr. Wight, almost the only distinction between G. religiosum and G. arboreum is that the former has a yellow and the latter a purple flower.—*Eng. Cyc.; W. Ic.*

GOSSYPIUM BARBADENSE. *Linn., Roxb.*
G. vitifolium, *Caranielles.*

This cotton plant, a native of the West Indies, is cultivated in India. It is called Barbadoes, Bourbon, Sea Island, West India, long-stapled, Upland Georgian, and short-stapled cotton. Swarz described this species as extensively cultivated in the West Indies. It is also one of the cultivated cottons of Egypt. M. Delchevalerie has noticed a new and almost branchless tall plant, exceedingly prolific, raised in Egypt, called Bamia cotton, which Sir Joseph Hooker considers to be a variety of G. Barbadense. It is more than probable that the Sea Island or long-staple cotton is a variety of this species, as its seeds agree in character. More than this it is not possible to say.—*W. Ill.; Royle, Ill.; Roxb.; Voigt; Eng. Cyc.; V. Mueller.*

GOSSYPIUM HERBACEUM. *L.; Roxb.; W. Ic. Ill.; Royle.*

Kotn, ... Arab.	Cay-haung, Hoa-mien, Ch.
Kapase, Tula, . . Beng.	Bomold, ... Dan.
Wa, ... Burm.	Ketoen, Boomwol, . Dut.
Bari of . . . Chenab.	Coton, ... Fr.

Kattun, Baumwolle, GER.	Algodno, Algodeiro, PORT.
Boubaki, ... GR.	Chlopts chateja, . RUS.
Kapas, Rooi. . . HIND.	Kaipasa, Karpasi, SANSK.
Cotone, Bombagia, . IT.	Algodon, ... SP.
Paruti, . . . MALEAL.	Bomull, ... SW.
Kobung, . . MONGOLIA.	Van parati, Parati, TAM.
Pambah, ... PERS.	Patti, Karpasamu, TEL.

Var. α. Daccanense; β. Berrarense, Berar cotton; γ. Chinense, China cotton; *var.* δ. Cawnporeense, Cawnpore and Doab cotton.

This species grows in the Peninsula of India, in Hindustan, Sind, Kābul, Bengal, the Malay Peninsula, and the Archipelago. It is grown as a hot-weather crop in many places all over the Panjab, ripening up to Christmas, and is cultivated up to the Kashmir valley (5000 feet), but the quality does not seem to be first rate. It has large sulphur-yellow flowers, with a dark blood-red eye, and fruits nearly all the year through.—*Stewart; Voigt.*

GOSSYPIUM HIRSUTUM. *Swarz.* This is the green-seeded, short-staple, and upland cotton of America, and French cotton of the W. Indies. Shrubby, about 6 feet high; young pods very hairy. This species is cultivated in Jamaica and the East Indies, according to Swarz.—*Eng. Cyc.; Roxb.*

GOSSYPIUM RELIGIOSUM. *Linn.*
G. Peruvianum, *Cavan.*

This is called kidney, Peruvian, Brazilian, and Nankin cotton. There is considerable confusion with respect to the species which should be called G. religiosum. The distinguishing characteristic of what is considered such at present, is the having tawny-coloured instead of white wool. There are, however, at least two distinct localities for this kind of cotton, one Siam, the other China. From the latter country it was introduced both into India and America, under the name of Nankin cotton. Dr. Royle is of opinion that two distinct species yield tawny-coloured cotton,—one with small velvety-looking leaves, and much dotted in every part, of which he had seen specimens from Macao, Tahiti, and Gujerat; the other is a much larger plant, with the general appearance and leaves of G. Barbadense, of which there are specimens in the East Indian Herbarium. Mr. Wilkinson also brought specimens from Egypt of a rather tawny-coloured cotton, with brownish seed, free from fur, which he says is there called Gotun Hindi. —*Bombay Products; Eng. Cyc.; Voigt; Roxb.*

GOSTANI DRAKSHA, SANSK.; also Gostani chettu, TEL. Vitis vinifera, *Linn.*; also Hatahura. The purple grape, which is of elongated shape like a cow's teat, in Sanskrit Gostani.

GOSWAMI, a name of the Gosain, from Go, sense, and Swami, master, one who controls his passions.

GOT. HIND. A family, a race; a family of Brahmans, bearing the common name of some ancient rishi or sage, their supposed progenitor or primitive spiritual head. The term is also applied to any branch or subdivision of a tribe or caste, and also to a caste collectively.—*Elliot.* See Gotra.

GOTA. HIND. Narrow gold lace; silver lace is Safed gota.

GOTA-CHOBI. HIND. A piece of wood cut to an edge, used in polishing leather.

GOTAMA, a name of Sakya Sinha, applied to him after his death, when he had become a Buddha. It is by this name that he is usually known in Burma. Also written Godama, Gaudama.

GOTAMA, founder of the Nyaya school of philosophy. He is called also Satananda, also frequently Gautama. He was author of a Dharma-sastra or law book.—*Dowson.*

GOTAMA SWAMI, a Brahman of the Gautama family, whose personal name was Indra-Bhuti. He became a disciple of Mahavira, often represented in Jaina sculptures, especially in Karnatica, and on the Malabar coast. A statue at Sravana Belgola in Mysore is 56½ feet in height; another at Yenur is about 35 feet; one at Karkala, 24 miles west of Yenur, is 41½ feet high. An inscription is on the last. See Hoisala.

GOTE. HIND. Presents given at the birth of a child.

GOTHI, the high priest of a Jaina temple.

GOTHIC, a branch of the Indo-Germanic stock of languages. The Goths consulted the heart of victims; had oracles, had sybils; had a Venus in Friya, and Parcæ in the Valkyrie.

GOTRA. SANSK. A hurdle, a pen, a fold, a tribe. Professor Wilson explains the term Gotra as meaning a family, lineage, relationship by descent from a common ancestor of the same name, or from some saint, or regard him as their primitive spiritual head, and whose designation they bear, as the Bharadwaja-gotra, Kasyapa-gotra, Sandilya-gotra, etc. In vol. ii. p. 12, of the Hindu Theatre, Professor Wilson says it is asserted that thirteen Gotra or families of Brahmans owe their origin to as many divine sages called after their name. Kasyapa (Kusip) is one of the number. The Aswalayana Sutra of the Rig Veda contains the enumeration of the Gotra, and their subdivisions, but in a very involved and unintelligible style. The popular enumeration of them, however, is not uncommon; but it is nearly, if not wholly, confined to the south of India, where several of the reputed representatives of these tribes yet exist. Throughout the entire Peninsula every Brahman claims his own Got; every marriage is regulated by the Got, and no Brahman marries into his own Got. Gotra, Vansa, Varna, Paksha, and Gana are all used, in a similar sense, to indicate the larger as well as the smaller families descended from the eight rishi. The care taken by all Brahmans in the S. of the Peninsula in making their marriage selections, justifies the conclusion that the genealogical lists of the Brahmans at the present day furnish in their general outlines a correct account of the priestly families of the Hindus. The eight rishi have eight Gotra, which are subdivided into 49 Gotra, and these 49 into a still larger number of families. In common parlance, Got has the same meaning as the more classical Gotra of Wilson's Glossary. Properly, those only are Got which bear the name of some rishi progenitor, as Sandilya, Bharadwaja Vasishtha, Kasyapa; but it has become the custom to call each subdivision of a tribe a Got, and, according to the Nirnye Sind, there are no less than ten thousand. Early genealogies of the Rajputs frequently exhibit them as abandoning their martial habits, and establishing religious sects or Gotra. Thus Reh was the fourth son of Proorwa, of the Lunar race; from him, in the fifteenth generation, was Harita, who with his eight brothers took the office of religion, and established the Kausika Gotra, a tribe of Brahmans. According to Colonel Tod, both Got and Kaup denote a clan, and in Rajputana its subdivisions have the patronymic

terminating with the syllable ote, awut, sote, in the use of which euphony alone is the guide: thus, Suktawut, sons of Sukta; Kurmasote, sons of Kurma; Mairawut or Mairote, mountaineers, sons of the mountain.—*Elliot; Wilson's Hin. Theatre; Wilson's Glossary.*

GOTTI GADDA. TEL. Spathium Chinense, *Lour.*, syn. of Aponogeton monostachys, *Linn.* The roots are much prized as food by the Yanadi.

GOU-CHUNA or Go-chunee is a field of wheat and chuna, or Cicer arietinum, sown together. The practice of sowing culmiferous and leguminous plants together is advantageous to the land as well as to the crop. Dew readily forms on the leaves of the chuna, which would not form on the wheat, and this in seasons of drought is often the means of preserving both crops. Agriculturists in Europe sow clover with barley, flax, and oats, and Lent-corn.—*Elliot.*

GOUGH, HUGH, VISCOUNT, born in 1779, was the son of George Gough, Esq. of Woodstown, county of Limerick, Ireland. He entered the British army in 1791, served at the capture of the Cape of Good Hope and of the Dutch fleet in Saldanha Bay, 1795, and afterwards in the West Indies, including the attack on Porto Rico, the brigand war in St. Lucia, and capture of Surinam. He proceeded to the Peninsula in 1809, and commanded the 87th regiment at the battle of Talavera, where he was dangerously wounded. Had horses shot under him both at Barossa and Vittoria and Nivelle; again severely wounded at Nivelle; for which engagements he received the gold cross. He also commanded this regiment at the sieges of Cadiz and Tariffa, where he was wounded in the head. At Barossa his regiment captured the eagle of the 8th French Regiment, and at Vittoria the baton of Marshal Jourdan. He was nominated to the Mysore division of the Madras army in 1837, and in 1840–41 went in command of the land forces against China, for which services he was made G.C.B. and a baronet. On the 11th August 1843 he was appointed Commander-in-Chief in India; and on the 29th of December 1843, with the right wing of the army of Gwalior, he defeated a Mahratta force at Maharajpur, and captured 56 guns, etc.; and on the same day General Grey, commanding the left wing of his army, routed another body of Mahrattas at Punniar. In 1845 and 1846 the army under his personal command defeated the Sikh army at Moodkee 18th December, Ferozshah 21st and 22d October, and Sobraon 22d February 1846, for which services he received the thanks of both Houses of Parliament, and was raised to the peerage. During the last desperate struggle with the Sikhs in 1848–49, he subdued the enemy at a great expenditure of human life. The next year he received from his sovereign additional rank in the peerage, from the East India Company a pension of £2000, and a similar sum from Parliament for himself and his next two successors. Sir Henry Hardinge, who was Governor-General, had voluntarily served under him as second in command at the battle of Ferozshah. He was gifted with great powers of combination and strategy; but his impulsive personal bravery, rushing into the midst of the battle, and by hurrying on one movement before the previous arrangement could be carried out, disarranged and rendered useless his own valuable plans. General Havelock said he was a man with a lust for danger. He excited the warmest attachment in his soldiers, and his zeal succeeded almost as well as Suwarrow's. He never lost a battle,—for Chillianwalla, though a terrible destruction of life, was not a lost battle; and at Gujerat, where, for the first time in his life, he took advice and let artillery have fair play, he destroyed the most dangerous enemy, save Hyder Ali, the British ever encountered in India. The victory was due in no slight degree to the reckless daring with which he inspired all under his command.—*Lond. Spectator, Men of the Times.*

GOUGHIA, a curious large evergreen laurel-like tree, found by Dr. Hooker at Chating, in the Lachen valley of Sikkim. It is very similar in foliage to a fine rhododendron. Wight gives G. Griffithiana and G. Neilgherrensis.—*Hooker.*

GOUL, amongst the Persians, a fabulous spirit, sometimes represented as in the form of a beautiful young woman, that resorts to churchyards. They affirm that it entices the traveller by its cries, and then tears him to pieces with its claws.—*De Bode's Tr.* p. 23. See Ghoul.

GOUR or Gaur, called also Lakhnauti, the ancient capital of Bengal, and its territory, supposed to be the Gangia Regia of Ptolemy. It stood on the left bank of the Ganges, on a stone embankment about 25 miles below Rajmahal. It was the capital of Bengal 730 years before Christ, and was repaired and beautified by Akbar, who gave it the name of Jannatabad, which name is still borne by a part of the circar in which it was situated. According to Ferishta's account, the unwholesomeness of its air about the middle of the sixteenth century occasioned it to be deserted soon after, and the seat of government was removed to Tondah or Tanrah, a few miles higher up the river; then to Rajmahal. Three causes, however, viz. the removal of the capital, the desertion of its old bed by the Ganges, and the unwholesomeness of the region, all contributed to turn Gour into a wilderness. No part of the site of ancient Gour is nearer to the present bank of the Ganges than four miles and a half; and some parts of it which were originally washed by that river, are now 12 miles from it. Taking the extent of the ruins of Gour at the most reasonable calculation, it was not less than 15 miles in length (extending along the old bank of the Ganges), and from two to three in breadth. The first rulers who have been identified, were the family of Bhupala. Abul Fazl, however, enumerates three dynasties as prior to this family. The first of the Vaidya rajas was Suk Sen, in A.D. 1063. Its last Hindu king was Lakshmanan. He had been placed on the throne in infancy, and during his long reign had been a just and liberal ruler. In A.D. 1203 Bengal was overrun by Bakhtiar, a general of Muhammad Gori, and the last Hindu king escaped to Orissa. Gour is also by many supposed to have been founded by one of the physician dynasty of Bengal, not long before the Mahomedan invasion, though Dow and Rennell state that it was the capital of Bengal, 730 years before Christ.—*Tr. of Hind.* i. p. 94; *Rennell's Memoir*, p. 55; *Prinsep's Antiquities.*

GOUR or Goura. Sanskrit pandits of old divided the colloquial languages of India into two classes, each containing five dialects, denominated respectively the five Gaura and the five Dravida. By the term Gaura or Gauda is meant the Bhasha or Prakrit or spoken tongues in Northern India,

some old ones of which have long ceased to be spoken, or have merged into others. At present the languages which may be considered Gaura are Bengali, Hindi with its neighbour the Hindustani, Panjabi, Gujerati, Mahrati, and the languages of Kashmir and Nepal, altogether nine. The pandits named the five Dravida or Dravira, viz. Telinga, Karnatika, Mahrati, Gurjara, and Dravira or Tamil proper; but at present Dr. Caldwell displaces the Gurjara or Gujerati and the Mahrati, and considers the Dravida proper or Tamil, the Telinga, and Canarese, to be the three principal languages of the Dravidian family; and he adds thereto the Malealam, the Tulu, and the uncultivated Toda, Kota, Gond, and Ku, altogether nine Dravidian or Tamil tongues. The Gaur alphabet is the immediate parent of the modern Bengali, and it is to be seen in the ancient inscriptions at Buddha Gaya in the Nag Arjuna cave, also in an inscription from Bhuvaneswar in Orissa, and in one from Brahmeswar in Cuttack. —*Dr. Caldwell's Comparative Grammar.*

GOUR, a race on the east of the Gond, who extend into the borders of the Chutia Nagpur agency in Udaipur and Sirguja. They are the dominant tribe in Sirguja; and the Sirguja raja is supposed to be a Gour, through claiming to be a Rajput. They are much Hinduized —*Sir George Campbell*, p. 32.

GOURA CORONATA and G. Victoriæ are noble pigeons of New Guinea and adjoining islands.

GOURAHUR, an obscure tribe of Rajputs in Saheswan, Gungeri, Puchlunah, Budurea, and Bilram, on the borders of Budaon and Alighur.

GOURAMI, the Osphromenus olfax, a fresh-water fish of Cochin-China and China, which has been introduced into Penang, Malacca, Bengal, Neilgherries, Mauritius, Bourbon, Cape of Good Hope, Australia, and Cayenne. Like all the Labyrinthidæ, it is provided with an apparatus for retaining water, so that when out of the water it can keep its gills moist, and can run to some distance by means of its fins and tail, and even leap upon the near plants to catch insects; grows to 20 lbs. in weight. It is esteemed of more delicate flavour than the salmon or turbot.

GOURD. ENG. Karat, ARAB. Gourd is a term, like that of melon and pumpkin, applied as a suffix to the fruits of species of the natural order Cucurbitaceæ or gourd tribe, and of the genera Cucurbita, Cucumis, and Lagenaria. The Cucurbitaceæ is a group of prostrate or climbing plants, with palmately-lobed leaves and tendrils, chiefly tropical, with but few species extending into cool regions. Many of the species are acrid and purgative.

Cucumis melo is the melon.
Benincasa cerifera, pumpkin or white gourd.
Lagenaria vulgaris, bottle gourd or white pumpkin.
Tricosanthes anguina is the snake gourd.
Cucumis sativa, the cucumber.
Cucurbita maxima, squash gourd or red gourd.
Cucurbita aurantia is the orange gourd.
Cucurbita ovifera, vegetable marrow.
The wild gourd of 2 Kings iv. 39 is the bitter cucumber, Citrullus colocynthis.

Towel gourds (Luffa Ægyptiaca, *D. C.*) are grown in the West Indies and West Africa. The close vascular network of the inside of this gourd serves as scrubbing brush and sponge.

GOURKANI, the name of the tribe to which Timur belonged, also Baber and his descendants. —*Ferrier, His. of Afghans*, p. 71.

GOUR-KAYET, one of the twelve subdivisions of the Kayasth race; they are chiefly to be found in Bengal.—*Elliot, Supp. Gloss.*

GOUROOA, also Gaurua, an inferior class of Rajputs in Rehur and Nugeena of Bijnore, Iradatnagar of Agra, and Suhar, Shergarh, and Huzur Tahsil of Muttra.—*Elliot, Supp. Gloss.*

GOVARDHAN, a mountain which the Yadu race worshipped. It is celebrated in Indian poetry, and is still a great place of Hindu pilgrimage. Nothing less than that it is the personification of Krishna himself is the opinion in which Govardhan is held by his followers. Devout votaries perform the circuit of the mount, by going round its base, prostrating themselves at each step on the way, and marking the space covered by their bodies. This penance can be completed only in several years, and one devotee has been heard of who had been able to go round but half the mountain in seven years. No Hindu dares to bring home any stone from Govardhan; it is said to be endued with life. The Luka-Luki, or hide-and-seek tank, near Govardhan, speaks of the early age of that game among the Hindus, having been played by Krishna with the Gopini. Govardhan mountain is fabled to have been reared by Krishna, who

'With one finger reared the vast Goverdhen.'

—*Sir W. Jones' Hymns to Indra*, xiii. p. 274; *Tr. of Hind.*

GOVERNOR, the official designation in British India of the President in Council of the Governments of Madras, of Bombay, of Ceylon, and of the Straits Settlements, all of whom rule with a council for administration and legislation. The rulers of Bengal and the Panjab are Lieutenant-Governors. Governor-General is the official designation of the chief ruler of British India. These have been in succession,—Warren Hastings, Sir John Macpherson, Earl Cornwallis, Sir John Shore, Sir Alured Clarke, Marquis of Wellesley, Marquis Cornwallis, Sir George Barlow, the Earl of Minto, Marquis of Hastings, Mr. John Adams, the Earl of Amherst, Mr. Butterworth Bayley, Lord William Bentinck, Sir Charles Metcalfe, the Earl of Auckland, the Earl of Ellenborough, whom the Court of Directors recalled, Lord Hardinge, Marquis of Dalhousie, Earl Canning, the Earl of Elgin, Sir Robert Napier, Sir William Denison, Sir John Laurence, the Earl of Mayo, Lord Napier and Ettrick, Lord Northbrook, who resigned, Lord Lytton (1877), who resigned 1880, and Lord Ripon. Governors-General have been Viceroy and Governor-General since Earl Canning, 1st Nov. 1858, and have under them 2 Governors, of Madras and Bombay; 3 Lieutenant-Governors, of Bengal, N.W. Provinces or Agra, and the Panjab and its dependencies; 5 Chief Commissioners, Oudh, Central Provinces, Burma, Sind, Hyderabad, Assigned Territories; as also 2 Residents, of Hyderabad and Nepal; 2 Agents to Governor-General, for Rajputana and Indore. Every order is issued in the name of the Governor-General in Council, but Lord Canning rearranged the Council into the form of a cabinet, with himself as president.

The Act for the Better Government of India (1858) enacts that India shall be governed by and in the name of the Queen of England,

through one of her principal Secretaries of State, assisted by a Council of fifteen members. By the Indian Councils Act (1861), the Governor-General's Council, and also the Councils of Madras and Bombay, were augmented by the addition of non-official members, either natives or Europeans, for legislative purposes only; and by another Act passed in the same year, High Courts of Judicature were constituted out of the old Supreme Courts at the presidency towns.

A Governor-General also rules the Portuguese Possessions of India; another Governor-General rules the Dutch East Indies, known as the Netherland Possessions in India; the Spanish East Indies in the Philippines have another Governor-General; and the French Possessions in India have a Governor.—*Imp. Gaz.* iv.

GOVIND, the tenth Guru of the Sikhs from Nanuk.

GOVINDA, Gopala, and Gokala are names of Krishna, derived from his pastoral avocation of herdsman, from Go, a cow. Gopinath, husband or lord of the Gopi, another name, is derived from his association with the Gopi herdwomen. Mr. Garrett says that Govinda was given by Indra as a name to Krishna after he had raised Govardhan. It is a frequently recurring name amongst the Hindus. The Gita Govinda are songs of Krishna; also a pastoral drama by Jayadeva, in praise of Krishna. Jayadeva, the bard of the Yadu race, in the opening of 'the songs of Govinda,' says, 'If thy soul be delighted with the remembrance of Hari, or sensible to the raptures of love, listen to the voice of Jayadeva, whose notes are both sweet and brilliant.' Jayadeva opens the first interview of Krishna and Radha with an animated description of a night in the rainy season, in which Hari or Krishna is represented as a wanderer, and Radha, daughter of the herd chief Nanda, is sent to offer him shelter in their cot. Nanda thus speaks to Radha: '"The firmament is obscured by clouds, the woodlands are black with tamala trees; that youth who roves in the forest will be fearful in the gloom of night; go, my daughter, bring the wanderer to my rustic mansion." Such was the command of Nanda the herdsman, and hence arose the love of Radha and Madhava.' The poet proceeds to apostrophize Hari, which the Hindu bard terms Rupaca, or personal description:—'O thou who reclinest on the bosom of Camala, whose ears flame with gems, and whose locks are embellished with sylvan flowers; thou from whom the day-star derived his effulgence, who slewest the venom-breathing Caliya, who beamest like a sun on the tribe of Yadu, that flourished like a lotus; thou who sittest on the plumage of Garuda, who sippest nectar from the radiant lips of Padma, as the fluttering chacora drinks the moonbeams. Be victorious, O Hari.'—*Malcolm's Central India.*

GOVINDGHUR, a huge fortress built in 1809 by Ranjit Singh, at Amritsar. It is garrisoned by British artillery and infantry.

GOWARI, a tribe of agriculturists speaking the Mahrati language, dwelling in the more civilised parts of the Central Provinces. They resemble Raj Gond, but are fairer.

GOWDAH, Gowdam, or Gounden, also written Gouda, Goura, the title of all respectable farmers and the headmen of villages in the Canarese and Coorg districts.

GOWHATTY, a town in Kamrup, 335 miles from Calcutta; it is on the left bank of the Brahmaputra river, in lat. 26° 11′ N., and long. 91° 48′ E., and is 130 feet above the sea-level. Pop. 11,492.

GOWLA. Guj., Hind., Tam. A brown-coloured seed, about the size of, and having much the same appearance as, the coriander seed, but more oval. They have a pleasant, sub-aromatic, and mucilaginous taste, and are considered by native practitioners as cordial and stomachic. They are imported from the Persian Gulf, and are distinguished in the bazars either with or without husks.—*Faulkner.*

GOYOSOO. Jap. A custom-house or town-hall, where all foreigners transact business and see Japanese officials.

GRACILLARIA COFFEIFOLIELLA. The larva of this mines the coffee leaves; it is very common, but of no importance to the planter.—*Nietner.*

GRACILLARIA LICHENOIDES. *Greville.*

Gr. confervoides, *Greville.*	Gigartina lichenoides, *Lamouroux.*
Fucus lichenoides, *Turner.*	
F. amylaceus, *O'Sh.*	Sphærococcus lichenoides, *Agardh.*
Plocaria candida, *Nees.*	
Aysana, Aytsana, . Amb.	Mousse de Celyon, . Fr.
Lattu-lattu, . . Archip.	Billung, ... Jav.
Callocane, . . . ,,	Dongi-dongi, Macassar.
Ceylon moss, . . . Eng.	Rumi yarwakar, Malay.
Edible sea-weed, . ,,	Sajar karang, . . ,,

A small and delicate fucus, well known for the amylaceous properties it possesses, and the large proportion of true starch it furnishes. The fronds are filiform, the filaments much branched, and of a light purple colour. It grows abundantly in the large lake or backwater which extends between Putlam and Calpentyn, Ceylon. It is collected by the natives principally during the south-west monsoon, when it becomes separated by the agitation of the water. The moss is spread on mats, and dried in the sun for two or three days. It is then washed several times in fresh water, and again exposed to the sun, which bleaches it; after which it is collected in heaps for exportation. 100 grains weight yielded the following proportions:—Vegetable jelly, 54·50; true starch, 15·00; ligneous fibre, 18·00; sulphate and muriate of soda, 6·50; gum, 4·00; sulphate and phosphate of lime, 1·00; with a trace of wax and iron. For a decoction of Ceylon moss, take Ceylon moss ground to fine powder two drachms, water one quart; boil for twenty minutes, strain through muslin. By increasing the proportion of the ground moss to half an ounce, the filtered solution on cooling becomes a firm jelly, which, when flavoured by cinnamon or lemon-peel, sugar, and a little wine, is an excellent article of light food for sick children and convalescents. The whole thallus of this one of the algæ is sometimes imported from Ceylon and the East Indies, and used in Britain for dressing silk goods. The agar-agar is a sea-weed exported from the islands of the Indian Archipelago as a portion of the cargo of every junk. It form a gelatinous mass with water, to which the Chinese add sugar, and use it as a sweetmeat.—*Beng. Phar.* p. 276.

GRACILLARIA TENAX.

Fucus spinosus, *Linn.*	Gigartina tenax.
F. tenax, *Turner.*	Gracillaria spinosa.
Eucheuma spinosa.	Gigartina spinosa.
Bulung, ... Jav.	Karang, Agar-agar, Malay.
Dongi-dongi, Macassar.	Sajor-karang, . ,,

Gracillaria tenax, one of the algæ of the order

Rhodymeniaceæ. Mr. Williams and the Hon. Mr. Morrison say that the Chinese people collect this sea-weed on the coast to a great extent, using it for food, and also in the arts, affording an excellent material for glues and varnishes. It is boiled, and the transparent glue obtained is brushed upon a porous kind of paper called sha-chi, which it renders nearly transparent. It is also used as a size for stiffening silks and gauze, and extensively employed in the manufacture of lanterns and in the preparation of paper for lattices and windows. This and other kinds of fuci are boiled down to a jelly by the islanders on the south, and extensively used for food. About 27,000 lbs. are annually imported into Canton from the provinces of Foh-kien and Che-kiang, and sold for 6d. to 8d. the pound. The Chinese make it the basis of an excellent glue and varnish, and employ it chiefly in the manufacture of lanterns, to strengthen or varnish the paper, and sometimes to thicken or give a gloss to silks or gauze. Mr. Neill thinks that the gummy substance called chin-chou or hai-tsai in China and Japan may be composed of this substance. Windows made of slips of bamboos and crossed diagonally, have frequently their interstices wholly filled with the transparent hai-tsai glue.—*Mr. Neill; Williams, Middle Kingdom*, p. 275; *Morrison's Comp. Sum.*

GRACULUS, a genus of birds of the order Natatores, tribe Piscatores, and family Graculidæ or cormorants, which comprise the Gr. carbo, Gr. Javanicus, Gr. Sinensis, the large, little, and lesser cormorants. Gr. Sinensis, *Shaw*, the leu-tze or fishing-bird of China (Phalacrocorax Sinensis) is bred and instructed in the art and practice of supplying his owner with fish. Around the gunnel of their light boats their cormorants perch. On each boat or raft are ten or a dozen birds, which at a signal from the owner plunge into the water; and it is astonishing to see the enormous size of fish with which they return grasped between their bills. They are so well trained, that it does not require either ring or cord about their throats to prevent them from swallowing any portion of their prey, except what the master was pleased to return to them for encouragement and food. The boat used is of a remarkably light make, and is carried to the lake, together with the fishing-birds, by the men who are there to be supported by it.—*Jerdon; Fortune.*

GRAHA. Sansk. A planet; a moveable point in the heavens. In Hindu astronomy the planets have each a great number of names or epithets. The following number are known to every Indian, because they serve to give names to the seven days of the week:—Ravi, or Surya, the sun; Chandra, or Soma, the moon; Mangala, or Cuja, Mars; Budha, Mercury; Guru, or Vrihaspati, Jupiter; Sucra, or Bhrigu, Venus; Sani, or Saturn. Besides these, the Hindu astronomers consider Rahu, the moon's ascending, and Ketu, her descending nodes, as obscure planets, which occasion the eclipses of the sun and moon. Graha, when the terms Madhya and Sphuta are prefixed to it, signifies the mean and apparent place of the planet in the Hindu sidereal or fixed zodiac. Graha laghava is the name of a treatise on astronomy, written about the 4657th year of the Cali yug (A.D. 1555). The Graha, or planets of the Hindus, are sometimes worshipped together, and at others separately. Graha Parivrithi is an account of time used by the inhabitants of the southern provinces of the Peninsula of India. It consists of a cycle of 90 solar sidereal years of 365d. 15g. 31v. 30p. Indian, or 365d. 6h. 12m. 36s. European time. Its epoch is A.A.C. 24, and it is constructed of the sum of the products of revolutions of Mars (15), Mercury (22), Jupiter (11), Venus (5), Saturn (9), and sun (1).—*Cole. Myth. Hind.* p. 38; *Warren, Kala Sanhita.*

GRAHAM, JOHN, a servant of the Bombay Government, author of a catalogue of the plants growing in Bombay and its vicinity, 1830, in which he was assisted by Mr. Joseph Nimmo of Bombay. Mr. Graham was a native of Dumfriesshire, and arrived in India in 1828. He died at Khandalla on the 28th May 1839, at the age of 34. The catalogue has unfortunately been of little use, owing to the absence of descriptions rendering it impossible to identify in a satisfactory manner the species referred to.—*Hooker f. et Th.*

GRAHILOTE or Gehlote, a Rajput tribe of the Suryavansi, the chief of which is the Maharana of Mewar. By universal consent, as well as by the gotra of this race, its princes are admitted to be the direct descendants of Rama, of the Solar line. A pedigree is deduced from him, and connected with Sumitra, the last prince mentioned in the genealogy of the Puranas.—*Tod's Rajasthan.*

GRAINS OF PARADISE, Shuh-sha-jin and Si-sha-tau, Chin., are small fruits produced by species of Amomum, the Amomum grana paradisi, *Linn.*, and A. grandiflorum. They are hot, acrid, and aromatic, and used for medicinal and other purposes as stomachic and cordial stimulants. Those of the Amomum xanthioides and of the Elettaria cardamomum are also known by the same Chinese names.—*Smith.*

GRALLATORES, the Grallæ of Linnæus, the wader order of birds, which some naturalists arrange as under:—

a. The young when hatched able to run at once.
1. Tribe Struthiones, comprising the ostriches, emus.
2. Tribe Pressirostres, bustards, plovers, cranes.
3. Tribe Longirostres, snipes and sandpipers.
4. Tribe Latitores, rails and water-hens.

b. With the young helpless when hatched.
5. Tribe Cultirostres, storks, herons, and ibises.

Many of these are migratory, and come annually into India across the Himalaya. Mr. Hodgson says the grallatorial and natatorial birds begin to arrive in Nepal from the north towards the close of August, and continue arriving till the middle of September. The first to appear are the common snipe, the jack snipe, and Rhynchæa; next, the scolopaceous waders (except the woodcock); next, the great birds of the heron and stork and crane families; then the Natatores; and lastly the woodcocks, which do not reach Nepal till November. The time of the re-appearance of these birds from the south is the beginning of March, and they go on arriving till the middle of May. The first which thus return to Nepal are the snipes; then come the teal and duck, then the large Natatores, and lastly the great cranes and storks. The Grallatores which visit Nepal or pass over it are much more numerous than the Natatores. The wild swan was once seen in Nepal in the mid-winter of 1828.

None of the Natatores stay in Nepal beyond a week or two in autumn (when the rice-fields tempt them), or beyond a few days in spring, except

the teal, the widgeon, and the coot, which remain for the whole season upon some few tanks whose sanctity precludes all molestation of them. There are cormorants throughout the season upon the larger rivers within the mountains, but none ever halt in the valley beyond a day or two. For so long, however, both they and pelicans may be seen occasionally on the banks.

The larus and sterna are birds which usually affect the high seas; but Mr. Hodgson had killed both the red-legged gull and a genuine pelagic tern in the valley of Nepal. But so had he fishing eagles; and in truth, he adds, who shall limit the wanderings of these long-winged birds of the ethereal expanse? See Birds; Migration.

GRAM, a word supposed to be derived from the Portuguese Grao, grain, but applied by Europeans in India to the pulses from species of Cicer, Dolichos, and Phaseolus.

Cicer arietinum furnishes that called Bengal gram, and is the Chenna or Chuna of Bengal.

Madras gram, generally known as Kulti, is the Dolichos uniflorus, *Lam.*, the D. biflorus, *Roxb.* It has a pale yellow and a jet black variety, and is both used for cattle, and by people in curries. It has been tried in England, but unsuccessfully.

Phaseolus mungo, *Linn.*, furnishes the green gram of all India; it is the Ph. max., *Roxb.* There are several varieties, one of them with black seeds, called black gram. It is a very important crop, and is largely exported. Its chemical composition is, starchy matter, 59·87; nitrogenous, 24·12; moisture, 11·05; fatty or oily matter, 1·29; and mineral constituents, 3·66.

Manilla gram is the ground nut, the Arachis hypogea, which is eaten as a fruit, and yields an edible oil. Gram exported from India,—

Year.	Cwt.	Rs.	Year.	Cwt.	Rs.
1874–75,	322,661	11,29,187	1877–78,	408,728	49,81,892
1875–76,	316,592	9,97,635	1878–79,	288,506	13,86,314
1876–77,	339,272	9,60,470	1879–80,	285,956	13,34,443

GRAM or Grama. SANSK. A village and its lands, modified into the Hindi, Gam, Gaon, Gaum, and in Telugu Gramamu. The village lands are held under several tenures in the different parts of India, either one individual being responsible for the revenue, or it is paid by a number of individuals as a coparcenary. In the Tamil portions of the S. of India, the Ekabhogam gramam (sole enjoyment) or Ijanan gramam (Yajamana, householder) is usually the property of a single individual. There are in N. India, Bhaya chara or brotherhood villages, called also Pattadari (share), in the Sanskrit, Pasung rarai and Pangu-vali, or by the Sanskrit terms Samohi or Samudayam. The Pattadari or share tenures in the south are called Arudi-karai, Achandrarham, Bhattavritti or Bharttvarti and Palabhogam.

Grama Deva, SANSK., a tutelar deity of the Hindus, who protects the fields, villages, and towns from evil spirits and from all evils. In the extreme south of India, Ayenar with his two wives are frequently the Grama Devata, the genii loci. In many parts of India the Grama Devata are the most popular objects of worship with the mass of the people. See Dehwar.

Gramani, in Travancore the headman of a village, is also the honorific suffix of the Shanar, a race who cultivate the palms for their palm-wine. In Bengali, Uriya, Tel., Karn., and Mal., it denotes the village barber.—*Wilson.*

Grama Peraverticum, TAM., a village senate or council which ruled the village republics of India prior to the introduction of the present system.

GRAMMAR is a favourite study among all Hindus. It is a tradition that Agastya wrote the first Tamil grammar, but it perished on account of the curse of his pupil Tolkappiyanar. The latter wrote what is called the Tolkappiyam, the oldest treatise on the subject now in existence. It contains 1276 sutras, or rules in verse. Pavananti wrote the Nannul, in 462 sutras, considered the standard work on Tamil grammar. It is greatly admired for its logical arrangement and comprehensive brevity. The Tamils boast that its sutras do not contain a single redundant word. Though intelligible to good scholars, others will think that the remark of Sir William Jones applies to them in some measure, 'dark as the darkest oracles.'

GRAMMATOPHYLLUM, a gigantic epiphytal orchid peculiar to the Archipelago. Its clusters of leaves and flower-stems are ten or twelve feet long.—*Wallace.*

GRANADA, a town in Spain. Its Alhambra, the ancient palace of the Moorish kings, in point of workmanship perhaps the most beautiful extant, and justly the pride of Granada, stands on a lofty eminence between the rivers Doura and Xenil, and derives its name from the red colour of the materials with which it is built. The words Al hamra signify the red house.

GRANADILLA, Passiflora quadrangularis, the Jamaica passion-flower, flourishes well on the Tenasserim coast, and is very prolific. The smooth oblong fruit grows nearly as large as a cucumber, and contains a succulent pulp, which makes a cooling, delicious dish, and, when prepared in tarts, can scarcely be distinguished from green apple. The Rev. Mr. Bennett of Tavoy introduced it among the Karens, by whom it is highly esteemed, and much sought for. It possesses all the attractive qualities of fine fruit, handsome fragrant blossoms, and, when trailed over an arbour, a rich, pleasing shade.—*Mason.*

GRANARIES or Grain Pits. Kalanjeum, TAM., Patra, TEL., are underground pits in which grain is stored. Grain pits in India are in elevated dry spots, their size being according to the nature of the soil. All the preparation they undergo is the incineration of certain vegetable substances, and lining the sides and bottom with wheat and barley stubble. The grain is then deposited in the pit, covered over with straw, and a terrace of earth about eighteen inches in height, and projecting in front beyond the orifice of the pit, is raised over it. This is secured with a coating of clay and cow-dung, which resists the ordinary rains, but is renewed as the rainfalls injure it. Grain can be kept in these for years without injury.

GRAND LAMA, the chief lama or priest of Buddha, in Tibet, who is supposed to be a Bodhisatwa, who abstains from accepting Buddhahood, and is re-born again and again for the benefit of mankind. See Buddha; Lama; Sakya.

GRAND MOGHUL, a title given in Europe to the last dynasty of Mahomedan rulers in India, who reigned at Dehli. See Moghul.

GRANGEA MADERASPATANA. *Poir.*

Gr. Adansonia, *Cass.*	Artemisia maderas., *Willd.*
Namuti, ... BENG.	Mashiputri, . . . TAM.
Nelam pata, . . MALEAL.	Mustaru, ... TEL.

Grows in Bengal and peninsular India; its leaves are used in medicine.—*Wight's Icones.*

GRANT'HA means book. Adi Grant'h, first book, is a name given to the first religious book of the Sikh religionists, to distinguish it from the Dasama Padshah-ka-Grant'h, or Book of the Tenth King, composed by Guru Govind.

GRAPES.

Anub, ... Arab.	Angur, ... Pers.
Pu-t'au, ... Chin.	Uvas, ... Port.
Raisins, ... Fr.	Dracha, Sansk., Tam., Tel.
Trauben, ... Ger.	Ubas; Racimos, . . Sp.
Darakh, Dak'h, . Hind.	Kodimundri pallam, Tam.
Grappi; Grappoli, . It.	Uzum, ... Turk.
Uvæ, ... Lat.	

Grapes, the fruit of the vine, are grown in most parts of British India and in China. There are many species of the genus Vitis, but the V. vinifera is the only one known as the grape vine. V. Indica, the Amclouka of the Indian Peninsula, Bengal, and Himalaya, produces beautiful clusters of round purple berries, and a large grape which is very fair eating; and the common vine of Europe is probably from this plant. The wild grapes of Isaiah v. 2 are a species of Solanum.

The vine seems to have been known in China from the earliest times, but varieties appear to have been re-introduced from Farghana, Ladakh, and other western countries. The wild V. Amurensis, *Ruppins*, of the Amur, has been supposed to be identical with the cultivated plant. Quantities of grapes are grown in Peh-chi-li and Shan-si provinces, green grapes in Sze-chuen and Foh-kien, and a very excellent sultana raisin in Tien-tsin.

Grapes dried before being ripe, and pounded, are used in Kābul as a pickle. In the Panjab several varieties of grapes are recognised,—Kandahari, a purple grape; Kishmishi, a small seedless grape, producing what are called in England sultana raisins,—these are of the varieties called Sahibi surkh and Sahibi ablak; Khatan grapes produce the large common raisins, called munakka; Fakhri, sometimes called Askari, a black grape; Munakka and Abjosh munakka are grapes dried in the sun; Rish baba; Dida-i-gau, a white grape, with some spots on the skin, which are said to resemble a cow's eye, hence its name; pious Hindus refuse to eat this grape on that account; Karghani (white), called from the name of a place; Angur Jalalabadi, called also Khatta angur, grown at Charbagh, a few miles from Jalalabad; Charangur, grown also at Jalalabad. The common sorts of grapes are Rocha-i-surkh and Rocha-i-safed, also Toran. Green grapes sold in the plains in the winter time, are the Hosaini or Shaikh kalli varieties; they are of large size, pale green colour, and of delicate flavour. They are picked before being quite ripe, and packed between layers of cotton wool, in round boxes made of white poplar wood, and tied up with a string of goat's hair; these are exported in thousands, and called Angur khatti. There is yet another, the Akta grape, which produces bloom raisins, called Dagh, or more properly Kishmish-i-daghi, which are prepared by dipping the ripe bunches of fruit into a boiling solution of quicklime and potash (hence called Abjosh, lit. infused in water) before drying in the shade.

In the Indian Peninsula there are several varieties, but the common leek-green is the most esteemed, though many persons like the Habshi grape. In the arid regions of Rajputana, where they depend entirely on the heavens for water, and where they calculate on a famine every seventh year, nothing that can administer to the wants of man is lost. The seeds of the wild grapes, as the bhoorut, buroo, herraro, sewun, are collected, and, mixed with bajra flour, enter much into the food of the poorer classes. They also store up great quantities of the wild ber, khyr, and kharil berries; and the long pods of the karjra, astringent and bitter as they are, are dried and formed into a flour.

GRAPE SUGAR, also called Glucose, is found in the fruits of most plants. It seems to act on the system in precisely the same way as cane-sugar. The result of the fermentation of grape-sugar is the production of alcohol, which does not differ much in composition from sugar.

GRAPHIC SLATE, that 'soils and writes,' is found east of Tavoy, and another and softer variety is found in Moulmein.—*Mason.*

GRAPHITE, also called Black Lead and Plumbago, occurs in Travancore, Ceylon, Vizianagram, at Gurjoli, and at Almorah. It occurs in Travancore, and also in the corresponding parallels on the eastern sides of the ghats in Tinnevelly, in both sites the rocks apparently coinciding in direction with the strata in Ceylon, in which this mineral occurs. Graphite is found in the districts of Simla. In Upper Burma it is found in large quantities to the east of Nat taik, on a low range of hills near the village of Nyoke toke.

GRAPSUS, a genus of the Crustaceæ.

Grapsus strigosus, *Edws.*, Red Sea, Indian Ocean, New Holland.
G. variegatus, *Edws.*, New Holland, Chili.
G. messor, *Edws.*, Red Sea, Indian Ocean.
G. plicatus, *Edws.*, Sandwich Islands.

GRAPTOPHYLLUM HORTENSE. *Nees.*
Justicia picta, *Roxb.*

Gnwæ-ban, . . . Burm.	Soorkh-vasooka, . Hind.
Sa-lat-nee, . . . ,,	Judi mara, . . Maleal.
Face plant, . . . Eng.	

A handsome flowering plant with large crimson flowers, native of Java, commonly cultivated in gardens in India.

Var. *b.* G. lurido-sanguineum, the Sa-lat-nee of the Burmese, is larger.

Some varieties have red and dark red spots. The leaves are used for the decoration of the dessert after dinner, and other ornamental purposes. Few leaves can be found on which some grotesque resemblance to the human countenance may not be fancied or traced.—*Riddell; Jaffrey; Voigt*, 488.

GRAS, the griffin of Rajputana. The Naguni is half serpent, half woman. At Barolli the Gras and Naguni are represented in a highly finished sculpture.—*Tod's Rajasthan*, ii. p. 716.

GRASIA. Hind. Garasio, Guj. In Malwa, Gujerat, Cutch, and Rajputana, a chief of a tribe claiming revenues from villages. In Mewar, the Grasia is of mixed Bhil and Rajput descent, paying tribute to the Rana of Udaipur. In Western India, a military chief. The term is derived from Grass, a Sanskrit word which signifies a mouthful, and has been metaphorically applied to designate the small share of the produce of a country which these landowners claim.—*Malcolm's Central India.*

GRASS.

Myek-ping, . . . Burm.	Erba, ... It.
Gras, . . . Dut., Ger.	Herva, ... Port.
Herbe, Gason, . . . Fr.	Traba; Travu, . . Rus.
Ghas, ... Hind.	Yerba, ... Sp.

In England the grasses have received great and deserved attention. In some places hay grasses are cultivated; in some, those adopted for pasturage or for catch-meadows; while in other localities preference is given to varieties which yield early or late pasturage, or have the recommendation of being suitable to some peculiarity of the soil. In India, however, the subject has received no such minute consideration, although deserving accurate investigation and careful experiment. The pasture lands are everywhere left to nature. There is generally a right of common pasturage, and there is nothing to prevent the village cattle from roaming at discretion.

The populations of Central and Southern Asia are largely pastoral and agricultural, and the grasses useful for cattle are therefore of vital importance. Nomades shift with the seasons of the year to their summer and winter grazing grounds; and in India, partly in this manner, and in part trusting to their natural grasses, they are still able to rear large herds and flocks, though the waste lands of India are yearly becoming more tilled to meet the wants of the increasing populations. Grass is but seldom cut and stacked as hay. The rapid growth and subsequent dryness render many natural Indian grasses unfit for pasture at the end of the year; and grass-cutters, who provide horses, usually search for and collect the dubh grass, the Cynodon dactylon.

Sir W. Jones observes (As. Res. iv. p. 242) 'that it is the sweetest and most nutritious pasture for cattle, and its usefulness, added to its beauty, induced the Hindus, in their earliest ages, to believe that it was the mansion of a benevolent nymph.' Even the Veda celebrates it, as in the following text of the A'tharvana: 'May Durva, which rose from the water of life, which has a hundred roots and a hundred stems, efface a hundred of my sins, and prolong my existence on earth a hundred years.'

In the east coast of the Peninsula of India, the vegetation of most plants is interrupted for a longer period by the dry season, than in Europe by the winter. The sandy tracts about Madras remain perfectly arid, only a little relieved by partial showers during the south-west monsoon. This alternation of drought and heat at one season, and of heavy rains at another, necessarily precludes the pasture grounds of the Karnatic from attaining the verdant, flourishing condition observable in extra-tropical countries. At the same time, however, the temperature of the cold weather admits of the production of a considerable quantity of serviceable grass.

No grasses are cultivated in China for food for animals. The country produces many species fitted for rearing flocks and herds, and are extensively cultivated in the south of China for weaving floor matting of various degrees of fineness, the coarser kinds of which are used also to construct sheds to screen workmen when building houses, and even the walls of the huts tenanted by the poor; the best comes from Lien-tan, west of Canton.

Of the grasses eaten by cattle, Sir A. Burnes mentions that three are cultivated in Kābul,—Rishka or Medicago sativa, the common lucerne; Shaftul, a kind of trefoil; and the Si-barga (three leaves), a clover new to Europe, which from its great yield was named Trifolium giganteum. Another plant, the Melilotus leucantha, or Bokhara clover, differs much from the Trifolium giganteum in its properties, though, like it, of luxuriant growth.

In the Rakhs of the Panjab, and in the 'bar' tracts during the rains, the whole surface of the plain is covered with grass. Thirty sorts—each with its distinctive name—were collected in the rainy season near Lahore.

Dr. Royle mentions that the grasses of Hurriana (Sirsa and Rohtak)—and it is true of the rakhs generally—consist of species of Panicum, Pennisetum, Cenchrus, Chætaria, Dactyloctenium, Chloris, Eleusine, Aeraehne, Poa, Eragrostis, and Andropogon, and to these, species of Saccharum and Rottbollia should be added. In one place a clover or lucerne, Shaftul, is grown, also Sinji, but this principally by Europeans for their horses and other cattle. Cattle in India are usually fed (besides grass) on Bhusa, or, as it is called in Panjabi, Turi, the chopped straws of wheat and barley; besides which they get Karbi, the dried stalks of Jowar (Sorghum vulgare); this latter when green and fresh is called Charri. Chopped leaves of the Ber (both Z. vulgaris and Z. nummularia), called Mulla, are much used, and are said to be fattening. Dr. Henderson mentions that in Shahpur, and one or two other districts, turnips are grown very extensively for feeding cattle during the cold weather, and they often attain a larger size than in Europe. A few of these are used in times of famine for food, as the Markan grass, the wild Sawank, and Phog. The seed of Calligonum polygonum is used as human food in the Panjab in times of famine. Dhaman or Anjan (Pennisetum cenchroides) is considered the best grass for cattle, rapidly improving their condition, and increasing their produce in milk. Jhang is a scented grass, probably Andropogon schœnanthus; and the root of A. muricatum forms the khaskhas used in matting tatties and screens for cooling purposes.

The Durva or Hurriali grass (Cynodon dactylon), unquestionably the best species which India possesses for forage, has been cultivated with great success at Vellore by Major Ottley, who has given an interesting account of this grass in the Madras Journal of Literature and Science, 1849, xv. p. 477. In upland districts rye-grass and clover grow; and both these exotics, when sown fresh, have been found to answer exceedingly well on the Shevaroy, Pulney, Neilgherry, and Baba Booden Hills. The Guinea grass has been strongly recommended in Bengal.

Inoculating Grass.—In poor soils such as that of the Karnatic, grass seeds do not take so well as in rich land, and there is great difficulty in procuring a good sward. In this case recourse must be had to planting, or, as some call it, inoculating grass. This is done by taking pieces of turf from the banks of a river or tank, and spreading them over the land to be laid down, after it has been prepared in the same manner as it would have been to receive the seed. The turf should be taken up in little square pieces, and spread over the surface of the ground, leaving small interspaces between each piece. A stone roller or a wooden beater should then be employed to press them into the ground. In a few days the interspaces will be found to be filled up, and a complete carpet of turf to have formed.

Before putting down the turf, poor stiff lands must be divided by ditches, ploughed in deep furrows, and exposed as much as possible to the wind and sun. Such soils may with careful culture and irrigation become permanent meadow land, but it is essential to get them into a sound state by most carefully clearing them of nuth grass and weeds before laying down grass seeds, and subsequently by keeping the land free of coarse grass by hand weeding. Paring and burning the surface have been found useful, and if beneficial in the first instance, the operation may be repeated with advantage.

Lespediza striata, *H. and A.*, the Japan clover of China and Japan, is much valued in N. America as a grass for cattle.—*Von Mueller; Powell; Royle, Ill.; Mason; Williams; Hooker's Him. Jour.*

GRASS-CLOTH, the Hia-pu or Chu-ma of the Chinese, is fabricated from the fibre of the Urtica nivea of Linnæus, the Boehmeria nivea of Gaudichaud. It is met with bleached and unbleached. It is extensively used by the Chinese, being woven into narrow pieces and into handkerchiefs, the export being chiefly to India and the United States, many handkerchiefs being sent to the latter country. Clothes are sent from the Chinese market to South America, made from grass-cloth and nankeen. No account of the quantity has been kept. Coarser sorts of China grass-cloth are furnished by the fibres of Sida tiliæfolia and Dolichos bulbosus.—*Smith.*

GRASSHOPPER.

Sauterelle, Cigale, . Fr.	Grillo, ... It.
Grashüpfer, . . Ger.	Langostino, ... Sp.
Tiddi, ... Hind.	

One of this tribe, a species of Deticus, is kept by the Chinese in cages for fighting. The Greeks ate grasshoppers, and liked them amazingly; the aborigines of New South Wales eat them raw, first taking off their wings.

GRASS OILS are obtained from species of Andropogon,—A. citratum, A. Martini, A. iwarancusa, and their allies. They are fragrant essential oils. In the south of the Peninsula of India, in Madura, are three grasses or sorts of grass, named Poathapil, Seegompil, and Komatchpil, which are employed to furnish grass oils. The stalks are cut into pieces a span in length, and put into earthen pans with water, and exposed to the action of fire. In the south of India and Ceylon they are known to the British as the lemon grass oils, also citronelle oils, ginger grass oil, essence of verbena.

The grass oil of Nemaur, Roosa-ka-tel, Hind., was first brought to notice by Dr. Maxwell in 1824, and was further described by Dr. Forsyth in 1826. This oil is obtained from the Andropogon Martini by distillation. 250 to 300 small bundles of the grass are placed in a boiler, covered with water, and distilled. About a seer of oil is obtained in the receiver. It is volatile, extremely pungent, of a light straw colour, very transparent, with a peculiar rich and agreeable odour. As a rubefacient, it is very highly esteemed by the wealthy natives of India for the cure of rheumatism, especially that of the chronic kind. Two drachms of the diluted oil are rubbed over the pained part in the heat of the sun, or before a fire, twice daily. It causes a strong sensation of heat or pricking, lasting for two hours or longer. The natives also regard it as an efficacious remedy in slight colds. They anoint the soles of the feet with the oil, and it is stated that slight diaphoresis is thus produced. It is also known as the ginger grass oil. It is employed as a substitute for cajaput oil. The grass has a strong aromatic taste, scenting the milk of those animals which feed on it. The oil is very fragrant and aromatic, and the colour is a pale straw. Much used in perfumery, and medicinally as a stimulant and diaphoretic. It has the power in a most remarkable degree of preventing the hair of the head from falling off after acute diseases, such as fever, or after confinement or prolonged nursing. It even restores it after it has fallen off, but it must be strong and pure.—*Royle, Useful Plants; Trans. Med. and Phys. Soc.* iii. p. 219; *O'Sh.*

GRASS TREE, or Australian Grass Tree or 'Black Boy' (Xanthorrhæa, *sp.*). Some of the grass trees are from 5 to 7 feet high, and as many in circumference. They have leaves 3 to 4 feet long, and flower-spikes 5 to 10 feet high, thickly clothed with hard scales and small white star-like flowers, except for about 1½ feet at the base, which is bare. Abundance of red resin is exuded by them.—*J. Backhouse.*

GRASS-WRACK, Zostera marina, *L.*, belongs to a small group of grass-like marine plants. It is common on the British coast, and in most parts of the world, near low-water mark. Used for packing and to stuff beds.

GRATIOLA SERRATA. *Irvine.*

Notched hyssop, . Eng. | Bhoomia-neem, Hind.

Grows wild during the rains; used as a bitter by the poor.—*Genl. Med. Top.* p. 173.

GRAUCALUS, a genus of cuckoo shrikes, of the family Laniadæ and sub-family Campephaginæ.

GRAVET, a term in Ceylon applied to the space outside the principal forts in the island. The Singhalese word Cadawetta describes the enclosure or boundary of a temple or city, or a royal chase. It was adopted by the Portuguese, after the erection of these fortresses, to define the limits of the lands they had been permitted by the native princes to appropriate, and the word Garvetta is still used in the patois of the Portuguese descendants. When the Dutch seized the forts, the word passed into Gravette, which appears on their records; and from the British, in turn, took the present term Gravet.—*Tennant's Christianity in Ceylon*, p. 291.

GRAY, J. E., author of Illustrations of Indian Zoology, chiefly from the collection of Major-General Hardwicke, Lond. 1830.

GREASE FOR RAILWAYS. The mixture used by the East Indian Railway for axle-grease is,—tallow, 50 lbs.; country soap, 20 lbs.; castor-oil, 30 lbs.; water, about 10 gallons. Melt the tallow in a large vessel, cut the soap in slices and put into the water when the latter is warm. When the soap is fully dissolved, pour the water containing it into the tallow, after which add the castor-oil; immediately after the latter is added, take the mixture off the fire, and while it is cooling let it be stirred constantly till cool. The mixture may require a little more or less water, according to the temperature of the weather.

GREAT MOGHUL, a designation employed by the nations of Europe as the title of last dynasty emperors of Dehli, most of whom were descendants of Baber.

GREAT WALL OF CHINA was built by the

emperor Chi-hoang, of the Tsin dynasty, about B.C. 260. It was done by forced labour,—every third labouring man was compelled to work for his bare food as a remuneration. It extends from the sea to the most westerly province of Shen-si, about 1500 miles. It was built of earth faced with brick. From the west shore of the Gulf of Liau-tung, in lat. 39° 58′ N., long. 119° 51′ E., originating within 100 yards of the beach, and having a masonry pier jutting out into the sea, it crosses mountains, valleys, and rivers, and was finished in five years. Its breadth admits of six horsemen riding abreast, and has a tower every hundred yards. It was Chi-hoang-ti who introduced yellow as the colour of the royal family. The route between Pekin and Western Asia and Europe issues from the western end of the Great Wall, to cross the desert of Gobi.

GREECE, a celebrated country in Europe, famed for the military exploits, learning, and arts of its inhabitants. The people of Greece call their country Ionia. It is the Yunan of the Mahomedans, whose people the Hindus style Yavana. It has produced many men famed throughout the world,—Alexander the Great, his teacher Aristotle, Socrates, Hippocrates, Plato, who are not mentioned by Hindus, although known to all the Mahomedans of Asia, as Sikander Rumi, Aristu, Sokrat, Bukrat, and Aflatun. The following Greek and Roman writers were known to the Mahomedans, viz.:—

Herodotus,	B.C. 450	Clemens Alexandrinus,	A.D. 200
Ctesias,	400	Eusebius,	320
Onesicritus,	325	Festus Avienus,	380
Megasthenes,	300	Marcian,	420
Strabo,	A.D. 20	Cosmas Indicopleustes,	525
Pomponius Mela,	20	Stephen of Byzantium,	560
Pliny,	77	Ravennotis Anonymi Cosmographia,	7th cent.
Periplus Mari Erythræi,	80	Georgius Syncellus,	800
Dionysius Periegetes,	86	Eustathius,	12th cent.
Ptolemy,	130		
Arrian,	150		

But the first Greek historian who speaks clearly of India is Hekataios of Miletus (549-486 B.C.); the knowledge of Herodotus (450 B.C.) ended at the Indus; and Ctesias, the physician (401 B.C.) brought back from his residence in Persia only a few facts about the products of India,—its dyes and fabrics, monkeys and parrots. India to the east of the Indus was first made known to Europe by the historians and men of science who accompanied Alexander the Great in 327 B.C. Their narratives, although now lost, are condensed in Strabo, Pliny, and Arrian. Soon afterwards, Megasthenes, as Greek ambassador resident at a court in the centre of Bengal (306-298 B.C.), had opportunities for the closest observation. The knowledge of the Greeks and Romans concerning India practically dates from his researches, 300 B.C. Alexander the Great had entered India early in 327 B.C. He crossed the Indus above Attock, and advanced without a struggle over the intervening territory of the Taxiles to the Jhelum (Hydaspes). Having drawn up his troops at a bend of the Jhelum, about 14 miles west of Chillianwalla, the Greek general crossed under shelter of a tempestuous night. The enemy had 30,000 efficient infantry, 4000 horse, 300 chariots, 200 elephants; and Alexander's army numbered about 50,000, including 5000 Indian auxiliaries under Mophis of Taxila. Alexander found the Rawal Pindi district in possession of the Takka or Takshak, a Scythic race; and, 1300 years afterwards, Mahmud found it in the possession of the Ghakkar, who are still there. It was from the Takshak that the Greek name of Taxiles was derived. Alexander advanced south-east through the kingdom of the younger Porus to Amritsar, and, after a sharp bend backward to the west to fight the Cathæi at Sangala, he reached the Beas (Hyphasis). The country was hostile, and the Greeks held only the land on which they encamped. At Multan, then as now the capital of the Southern Panjab, he had to fight a pitched battle with the Malli, and was severely wounded in taking the city. His enraged troops put every soul within it to the sword. Further down, near the confluence of the five rivers of the Panjab, he made a long halt, built a town, which he called Alexandria, and which is the modern Uchh.

Alexander, in his advance towards the Indus, had formed military stations in Bactria, and after his demise, when the generals of his armies set up for independence, Bactria was carved into kingdoms, which, with varying limits, lasted from B.C. 256 to A.D. 207. Lassen supposes the existence of four Greek kingdoms, viz. first, that of Bactria; a second eastern kingdom under Menander and Apollodotus, comprehending the Panjab and valley of the Indus, with Kābul and Arachotia or Kandahar added in times of its prosperity; a third, western, at Herat and in Seistan; a fourth, central, of the Paropamisus, which latter region Mr. Prinsep is inclined to give to Bactria, because of the bilingual as well as the pure Greek coins, of Heliocles and Antimachus, kings of Bactria. Mr. Thomas, in Prinsep's Antiquities, gives Major Cunningham's table. The countries over which the Greeks ruled were seemingly Bactria, Sogdiana, Margiana, Paropamisidæ, Nysa, Aria-Drangia, Arachosia, Gandharitis, Peukelaotis, Taxila, Patalene, Syrastrene, and Larice; but their limits were incessantly varying. The dynasties in Asia, founded after the death of Alexander the Great, by his generals, etc., were as under:—

I. *Syria.*

B.C.	B.C.
334. Alexander the Great; born 356, died 323.	137. Antiochus VII. Sidetes
312. Seleucus I., Nicator.	128. Alexander II., Zebina.
280. Antiochus I., Soter.	125. Seleucus V.
261. Antiochus II., Theos.	125. Antiochus VIII. Grypus
246. Seleucus II. Callinicus.	112. Antiochus IX., Cyzicenus.
226. Seleucus III. Ceraunus	96. Seleucus VI., Epiphanes.
223. Antiochus III. Magnus (Achæus).	95. Antiochus X. Eusebes.
187. Seleucus IV., Philopator.	Antioc. XI. Epiphenes. Philip and
175. Antiochus IV., Epiphanes.	94. Demetrius III. Eucærus
164. Antiochus V. Eupator.	88. Antiochus XII. Dionysius of Josephus.
162. Demetrius I., Soter.	83. Tigranes of Armenia.
150. Alexander I., Bala.	69. Antiochus XIII. Asiaticus.
147. Demetrius II. Nicator.	65. Syria became a Roman province.
144. Antiochus VI., Theos.	
142. Tryphon.	

Antiochus Soter succeeded Seleucus Nicator, and, in the reign of his successor, Antiochus Theos,

Arsaces, a Scythian, who came from the north of the Sea of Azof, induced the Persians to throw off the Greek yoke, founded the Parthian empire, and made Rhages his capital. This was likewise the period of the foundation of the Bactrian kingdom by Theodotus, the governor of it, who,

finding himself cut off from Syria by the Persian revolution, declared his independence.

Arsaces is called Asteh by Eastern writers, and is said to have been a descendant of the ancient Persian kings. When he gained the kingdom, it is said he promised to exact no tribute, and merely to consider himself as the head of a confederacy f princes, united for the double object of maintaining their independence and freeing Persia from a foreign yoke. This is the commencement of that era of Persian history called by Eastern writers Muluk-ut-Tuaif, or commonwealth of tribes. In A.D. 906 Rhages was taken by Ismail, founder of the Samani dynasty. It ceased now to be a seat of empire, and in A.D. 967 became the capital of the house of Shemgur, a race of petty princes who maintained a kind of independence, while the dynasties of Saman and Dilemee divided the empire of Persia. In A.D. 1027 Rhages was the last conquest of Mahmud of Ghazni.

II. *Bactria.*

The sole evidence of the long line of Bactrian kings exists in the emanations from their mints, exumed from time to time in and around their ancient seats of government. In the almost total absence of annals, whether occidental or oriental, their coins furnish nearly all the testimony at present available with which to reconstruct the story of the survival, re-institution, and extinction, of the dominant Hellenic element on the site of Alexander's furthest conquest in the East, and of those potentates who swayed the dynasties of these lands for upwards of two centuries. Professor Wilson gives a list of them from Theodotus I., B.C. 256, to Pantaleon, B.C. 120. Then of Barbaric kings, Su Hermæus, Kadaphes and Kadphises, from B.C. 100 to B.C. 50. Of an Indo-Parthian dynasty; the Indo-Scythian princes of Kābul; and a classification of their contemporaries. Mr. Thomas, in Prinsep's Antiquities, quotes Major Cunningham's table :—

B.C.
256. Diodotus I., . } Bactriana (including Sogdiana,
243. ,, II.,. } Bactria, and Margiana).
247. Agathocles, . } Paropamisidæ and Nysa.
227. Pantaleon, . }
220. Euthydemus—Bactriana, Ariana (including Aria, Drangia, Arachosia, and Paropamisidæ), Nysa, and subsequently Gandharitis, Peukelaotis, and Taxila.
196. Demetrius, do., do., and later in his reign, Patalene, Syrastrene, Larice.
190. Heliocles—Bactriana and Paropamisidæ.
190. Antimachus Theos—Nysa, Gandharitis, Peukelaotis, and Taxila.
185. Eucratides—Bactriana, Ariana, besides Patalene, Syrastrene, and Larice, as well as Nysa, Gandharitis, Peukelaotis, and Taxila.
173. Antimachus Nikephoros—Nysa, Gand., Peuk., and Taxila, contemporarily with Eucratides' retention of the rest of his dominions.
165. Philoxenes succeeds to Antimachus Nikephoros' kingdom.
Nicias, do., with the exception of Taxila.
165. Apollodotus succeeds Eucratides in Ariana, as well as Pata., Syr., Larice.
Zoilus, . . } follow Apollodotus in Ariana alone.
Diomedes, }
Dionysius, }
159. Lysias succeeds these in Paropamisidæ, and obtains Nicias' dominion of Nysa, Gand., Peuk.; while Mithridates I. possesses himself of Ariana, having previously gained Margiana from Eucratides.
Antialcides succeeds to Lysias' kingdom.
Amyntas.
Archebius follows Antialcides.

B.C.
161-140. Menander reigns in Paropamisidæ, Nysa, Gand., Peuk., Taxila, Por., Reg., Cath., Patalene, Syr., Larice.
135. Strato succeeds, with the exception of the countries of Pata., Syr., Larice, which fall to Mauas.
Hippostratus, Telephus Theophilus, follow Strato.

Of all the kings who followed Eucratides, Menander and Apollodotus alone are mentioned by classical authorities. Menander advanced furthest into N.W. India, and his coins are found from Kābul as far as Muttra on the Junna.

B.C. *Barbaric Kings.*
126. Hermæus rules over Parop., Nysa, Gand., Peuk. (The Su-Saka race obtain Aria., Drangia, and Arach. from the Parthians.)
Mauas has Taxila, Por., Reg., Cath., Patalene, Syrastrene, Larice.
105. Kadphises (Yu-chi) takes possession of Hermæus' kingdom, and Taxila from Mauas (Kozola Kadaphes).
Vononcs, Spalygis, Spalirises—Paropamisidæ.
110. Azas succeeds Mauas, obtaining also, in 90 B.C., Nysa, Gand., and Peuk.
80. Azilas succeeds Azas in the three latter, adding Taxila and the Paropamisidæ.
80. The Soter Megas obtains the dominions of Azas, and subsequently those of Azilas.
60. The Yu-chi again possess Paro., Nysa, and Taxila, etc.
26. Gondophares reigns in Ariana, Abdagasses (and
A.D. Sinnakes or Addinigaus) do. in do., less the Parop.
44. Arsaces (Ornospades or Orthomasdes), do. do.
107. Pakores Monnesses, do. do. (Hiathelch) in Bactriana.
207. Artemon—in Aria, Drangia, Arachosia.

III. *Parthia.*

A.D.
255. Arsaces I.
253. Tiridates I.
216. Artabanus I.
196. Phraapatius.
181. Phrahates I.
173. Mithridates I.
136. Phrahates II.
126. Artabanus II.
123. Mithridates II.
87. Mnaskires.
77. Sinatroces.
70. Phrahates III.
60. Mithridates III.
54. Orodes I.
37. Phrahates IV.
(Tiridates) II.
(Phrahates) IV.

A.D.
4. Phrahates.
5. Orodes II.
5. Vonones I.
13. Artabanus III.

A.D.
(Tiridates) III.
(Cinnamus.)
(Artabanus) III.
42. Bardanes.
45. Gotarzes.
50. (Meherdates).
51. Vonones II.
51. Vologeses I.
62. (Artabanus) IV.
77. Pacorus.
108. Chosroes.
115. (Parthamaspates).
116. Chosroes.
121. (Vologeses) II.
148. Vologeses III.
192. (Vologeses) IV.
209. (Vologeses) V.
Artabanus V.
235. Artaxerxes, king of Persia, first of the Sassanidæ.

The family name Arsaces was that applied to all the kings of Parthia, hence called the Arsacidæ.

There were military colonies of Macedonians established at Alexandria ad Caucasum, Arigæum, and Bazira, and garrisons at Nysa, Ora, Massaga, Peukelaotis, and at Aornis, a mountain range, supposed to be the mountains of Mahaban in the Pir Panjal or mid-Himalayan range. Megasthenes mentions that India was divided into 118 kingdoms, some of which, such as that of the Prasii under Chandragupta, exercised suzerain powers. In the inscriptions of Asoka, five Greek princes appear,—Antiochus (of Syria); Ptolemy (Philadelphos, of Egypt); Antigonas (Gonatas, of Macedon); Magas (of Kyrene); Alexander (II., of Epirus).

It would appear that the Greek colonists in the

Panjab had first been placed under Philip, while the civil administration of the country remained in the hands of its native princes, Taxiles and Porus. Afterwards, on the murder of Philip by the mercenary soldiers, Alexander (Anabasis, vi. 2, vii.) directed Eudemos and Taxiles to govern the country until he should send another deputy. It is probable, however, that they continued to retain the charge; for, after Alexander's death in B.C. 323, Eudemos contrived by his general Eumenes to make himself master of the country, by the treacherous assassination of king Porus (Diodorus, xix. 5). Some few years later, in B.C. 317, he marched to the assistance of Eumenes with 3000 infantry and 5000 cavalry, and no less than 120 elephants. With this force he performed good service at the battle of Gabiene. But his continued absence gave the Indians an opportunity not to be neglected, and their liberty was fully asserted by the expulsion of the Greek troops and the slaughter of their chiefs,—Justin, xv. 4—'Præfactos ejus occiderat;' again, 'Molienti deinde bellum adversus præfactos Alexandri.' Chandragupta was present when Porus was murdered, and he became the leader of the national movement, which ended in his own elevation to the sovereignty of the Panjab. Justin attributes his success to the assistance of banditti; Justin, xv. 4—'Contractis latronibus Indos ad novitatem regni solicitavit.' But in this Colonel Cunningham thinks he has been misled by a very natural mistake; for the Aratta, who were the dominant people of the Eastern Panjab, are never mentioned in the Mahabharata without being called robbers (Lassen, Pentapot. Indica), —'Aratti profecto latrones,' and 'Bahici latrones.' The Sanskrit name is Arashtra, the 'kingless,' which is preserved in the Adraistæ of Arrian, who places them on the Ravi. They were the republican defenders of Sangala or Sakala, a fact which points to their Sanskrit name of Arashtra, or 'kingless.' But though their power was then confined to the Eastern Panjab, the people themselves had once spread over the whole country,—'Ubi fluvii illi quini . . . ibi sedes sunt Arrattorum' (Lassen, Pentapot. Indica, from the Mahabharat). They were known by the several names of Bahika, Jarttika, and Takka, of which the last would appear to have been their true appellation; for their old capital of Taxila or Takka-sila was known to the Greeks of Alexander, and the people themselves still exist in considerable numbers in the Panjab hills. The ancient extent of their power is proved by the present prevalence of their alphabetical characters, which, under the name of Takri or Takni, are now used by all the Hindus of Kashmir and the northern mountains, from Simla and Subathu to Kābul and Bamian. On these grounds Major Cunningham identifies the banditti of Justin with the Takka, or original inhabitants of the Panjab, and assigns to them the honour of delivering their native land from the thraldom of a foreign yoke. This event occurred most probably about 316 B.C., or shortly after the march of Eudemos to the assistance of Eumenes. It was followed immediately by the conquest of Gangetic India, Justin, xv. 4; and in 316 B.C. the rule of Chandragupta was acknowledged over the whole northern Peninsula, from the Indus to the mouths of the Ganges. According to Colonel Tod, the Yavan or Greek princes, who apparently continued to rule within the Indus after the Christian era, were either the remains of the Bactrian dynasty, or the independent kingdom of Demetrius or Apollodotus, who ruled in the Panjab, having as their capital Sagala, changed by Demetrius to Euthydemia. Beyer says, in his Hist. Reg. Bact. p. 84, that according to Claudius Ptolemy there was a city within the Hydaspes yet nearer the Indus, called Sagala, also Euthydemia; but he scarcely doubts that Demetrius called it Euthydemia, from his father, after his death and that of Menander. Demetrius was deprived of his patrimony A.U.C. 562. Sagala is conjectured by Colonel Tod to be the Salbhanpura of the Yadu when driven from Zabulisthan, and that of the Yuchi or Yuti, who were fixed there from Central Asia in the 5th century, and, if so early as the 2d century, when Ptolemy wrote, may have originated the change to Yuti-media, the 'central Yuti.' Numerous medals, chiefly found within the probable limits of the Greek kingdom of Sagala, either belong to these princes or the Parthian kings of Minagara on the Indus. The legends are in Greek on one side, and in the Sassanian character on the reverse. The names of Apollodotus and Menander have been deciphered, and the titles of Great King, Saviour, and other epithets adopted by the Arsacidæ, are perfectly legible. The devices, however, resemble the Parthian. These Greeks and Parthians must have gradually merged into the Hindu population. Recent travellers—Burnes, Masson, and Ferrier—met with tribes who claim a Grecian descent. According to Burnes, the Mir of Badakhshan, the chief of Darwaz in the valley of the Oxus, and the chiefs eastward of Darwaz who occupy the provinces of Kulab, Shaughnan, and Wakhan north of the Oxus, also the hill states of Chitral, Gilghit, and Iskardo, are all held by chiefs who claim a Grecian origin.

According to Ferrier, however, the whole of the princes who claim descent from Alexander are Tajak, who inhabited the country before it was overrun by Turki or Tartar tribes. The Tajak, now Mahomedans, regard Alexander as a prophet. The Badakhshan family are fair, but present nothing in form or feature resembling the Greek. They are not unlike the modern Persian, and there is a decided contrast between them and the Turk and Uzbak.

According to some writers, the fair complexion and regular features of the Siahposh Kafir, the variously coloured eye and shaded hair, indicate them to belong to the European family of nations, and disconnect them from the Tajak, the Hazara, the Uzbak, or the Kirghis. It also merits consideration that the region now inhabited by the Siahposh is surrounded by the countries in which the Greek dynasties ruled, and is encircled by the colonies, posts, and garrisons which they are known to have established; and by the fact of the establishment of military colonies of Macedonians at Alexandria ad Caucasum, Arigæum, and Bazira, and of the garrisons of Nysa, Ora, Massaga, Peukelaotis, and Aornis. General Ferrier, on reaching Gazergah, found there a small encampment of persons in the Uzbak dress, but whose configuration of features clearly indicated quite another origin. They stated that they were the descendants of the Yunani (Greeks) whom Alexander the Great (Sikander Rumi) had left in these

countries; and from the replies he received to the numerous questions he put to these people, he was convinced of the existence of the real descendants of the ancient Greeks in those countries. These Yunani, he says, are not isolated and dispersed here and there, but united in tribes, occupying a considerable tract of country; nothing, however, either in their language or their habits betrays their origin. They are Mahomedans, and have the reputation of being somewhat fanatical, and are not held in much consideration by the Tartars, amongst whom they are settled; but they are respected, for, like their ancestors, they are brave, and the consequences of their hatred are terrible to those who are the objects of it.

It is stated in the Dabistan that Callisthenes sent to his uncle a technical system of logic (naya), which was the basis of the Aristotelian system. We also observe a close affinity between Aristotle's theory of the soul as regards its organism, and the Vedanta-darsana; and Plato's ideas as to the detachment of the soul from the world of sense, constituting the true subjective condition, bear an analogy to the Sankhya philosophy. The Greek kings as well as the Scythians adopted a language closely allied to the Sanskrit. The inscriptions for more than two centuries, during the Greek and Scythian connection, invariably contain the Greek with a vernacular translation. The coins of the Sah kings of Saurashtra have an imperfect Greek and Sanskrit inscription, while those of the Guptas (2d to 4th century A.D.) have an emblem of the Greek and Pali, showing the gradual disappearance of the Greek from the Indian coins. The Greeks adopted the Indian symbol of Swastika.

Greece and Asia Minor seem to have been parcelled out among a number of deities, each of whom was the paternal god of some city or race, having not only separate rites, but a form of worship widely different. Each deity had his favourite abode, and local attachment to some valley or grove or town, to which the power and presence of the divinity especially belonged; and hence in Bœotian Thrace we trace the orgies of Bacchus, in Northern Thessaly the worship of Apollo, on the Corinthian shores the rites of Neptune, in Argos the temples of Juno, and in Ephesus the worship of Diana. Though acknowledged to be divine out of their own peculiar domains, yet their worshippers were rather averse to proselytism, fearing lest, by an extended communication, the local influence of the deity should be weakened. The sacred object of Ephesian worship was carefully preserved from the period of its first formation, through the ages which intervened, till the demolition of pagan temples which followed upon the rise of Christianity. The image consisted of a large block of wood of beech or elm, but, according to some, of ebony or vine, shaped into a likeness of the goddess, and evidencing its remote antiquity by the rudeness of its workmanship. The first statues were unshaped blocks and stones; and hence the word column was generally used by the Greeks to denote a statue. Greeks identified Baal with Zeus, as they did Astarte with Venus. The heaven-fallen idol of Ephesus was not a representation of the elegant huntress of classic fable, but an Egyptian hieroglyphic, a personification of nature. In this character she was pictured as a woman having a number of breasts, to denote, according to Jerome, that, as nature, she was 'the nurse, the supporter and life, of all living creatures.'

The Greek people are now Christians; but until the time of Jesus Christ both Greece and Rome were worshippers of idols, of spirits of deified men, of gods residing in a higher sphere, and of demons in a hell below; and the gods of ancient Greece and Rome have been reckoned at not fewer than thirty thousand. These gods were in their characters simply exaggerated men, with human virtues and vices on an enlarged scale. The common people of Greece continued to believe in these gods until Christianity displaced them; but philosophers early appeared doubting their existence. Xenophanes, B.C. 534, denounced the accounts of the deities as godless fables; but he frankly admitted that he knew not God. About a century later lived the philosopher Thales, followed by Socrates, Plato, the Pyrrhonists, the Academics, the Peripatetics, Epicurus, and the Stoics, all of whom saw the absurdity of the popular creeds, and put forth philosophic views. Milton says of them (Paradise Regained, book iv.):—

'The first and wisest of them all professed
To know this only, that he nothing knew;
The next to fabling fell and smooth conceits;
A third sort doubted all things, though plain sense;
Others in virtue placed felicity,
But virtue joined with riches and long life;
In corporal pleasure he, and careless ease;
The Stoic last, in philosophic pride,
By him called wisdom.
Much of the soul they talk, but all awry,
And in themselves seek wisdom; and to themselves
All glory arrogate,—to God give none.'

In Homer's time the manners were rude and coarse; in subsequent centuries, immorality and vice grew. The Romans copied the Greeks in religion and manners, though Cato the Censor warned his countrymen against Greeks as the parents of every vice. For two centuries before the birth of Christ, immorality and infidelity greatly increased. From the time of Augustus superstition began to reappear, chiefly in the form of wild oriental rites. Human sacrifices were offered as late as the reign of Augustus; slavery was universal; in the public shows gladiators appeared,—sometimes more than 20,000 men perished in these exhibitions in one month. Both Greek and Roman authors complained that the characters of the people were as grossly corrupt as that of the deities they worshipped.

It was from Chaldæa that the germs of Greek art and of much of the Greek pantheon and mythology originally came. Columnar architecture reached its first and highest development in Babylonia. The lions of Mykenæ are distinctly Assyrian in character; and the Greek Herakles, with his twelve labours, finds his prototype in the hero of the great Chaldæan epic.

Grecian mythology is largely mixed up with the mythology of India.

Yama or Dharmaraja is the Grecian Pluto.
Vaitarini of the Hindu pantheon has its supposed analogue in the river Styx.
Cerberus has corresponding dogs.
Durga is the analogue of Juno.
Narada, god of music,—Mercury.
Krishna,—Apollo.
Bhawani,—Venus.
Kali or Durga,—Proserpine.
Agni,—Vulcan, fire, ignis.
Swaha, wife of Agni,—Vesta.
Aswini-Kumara,—Castor and Pollux.

Aruna,—Aurora.
Ata Deva,—Diana.
Kuvera,—Plutus, god of riches.
Indra,—Jupiter, god of the firmament.
Varuna,—Neptune, god of the water.
Prithivi,—Cybele, goddess of earth.
Viswakarma,—Vulcan, architect of the gods.
Kartikeya or Skanda,—Mars, god of war.
Kama,—Cupid, Eros, god of love.
Surya or Arka,—Sol, the sun.
Hanuman, the monkey god, son of Pavana,—Pan.
Rama,—the Grecian Dionysius.
Heracula, an Indian deity,—Hercules.
Aswiculapa,—Esculapius, Genii.
Vaya,—Æolus.
Sri, Lakshmi,—Ceres.
Anna-Purna,—Anna perenna.

The Greek Charites must be compared with the Sanskrit Harits, the coursers of the sun; and both received their name from a root, Ghar, to shine or glisten. Zeus seems to be the Sanskrit Dyaus, and Erinys is Saranyu.

Scythian coins exhibit Greek and Hindu divinities, and those under the Yu-chi have an image of Siva and the Nandi bull. The affinity between the Greeks and the Hindus was so great as regards the languages, literature, and religion, that the process of giving and receiving must have been reciprocal. Varaha Mihira, in his Brihat Sanhita astronomy, says 'the Greeks indeed are foreigners, but with them this science is in a flourishing state.' We find that the later Greek physicians availed themselves of the Hindu medical works.

The Takshaks and Nagas were the tree and serpent worshippers, whose rites and objects of adoration have impressed themselves deeply on the architecture and sculptures of India. The names were applied in a confused manner to different races of Scythic origin.—*Imp. Gaz.; Tod's Rajasthan; Prinsep's Antiquities by Thomas; Smith's Biog. Dict.; Ed. Ferrier's Journal; General Cunningham, Anc. Geog. of India; Calcutta Review*, No. 109; *Malcolm's Persia; Weber, Hist. Ind. Lit.; Wilson in J. R. A. Soc.* xii., 1850; *Milner's Seven Churches of Asia; the Rev. J. Murray Mitchell, Letter to Indian Youth; Burnes.*

GREEN COPPERAS or Green Vitriol.

Sulphate of iron, .	ENG.	Solfate di ferro, . .	IT.
Sulfate de fer, . .	FR.	Taroosee, . . .	MAL.
Schwefelsaures eisen,	GER.	Zunkur madnee, .	PERS.
Heracassis, . . .	HIND.	Tootiya-sabz, . .	,,
Hera-tutia, . .	,,	Anna bugdi, . .	TAM.

A principal ingredient in dyeing, in the manufacture of ink, and of Prussian blue. It is also used in tanning, painting, medicine, etc.—*M'C.; Faulkner.*

GREEN DYE. In the Comptes Rendus, xxxv. p. 558, there is an account by M. J. Persoz of a green colouring matter from China, of great stability, having the appearance of indigo, which communicates a beautiful and permanent sea-green colour to mordants of alumina and iron, and which is not a preparation of indigo or any derivative of this dyeing principle. It was in thin plates of a blue colour, resembling Japanese indigo, but of a finer grain, differing also from indigo in its composition and chemical properties. On infusing a very small quantity of it in water, this fluid soon acquired a deep blue colour, with a greenish tinge. Upon boiling and immersing a piece of calico, on which the mordants of iron and alumina had been printed, it was dyed a sea-green colour of greater or less intensity according to the strength of the mordant, the portions not coated remaining white. Dr. R. F. Thompson, civil surgeon of Malda, wrote as to a green dye as follows:—'One maund of the dried leaves will dye 1280 yards of cloth of a fine apple-green colour. The supply cheap and unlimited; cultivation easily extended from cuttings or seed; requires little care or watching, as no animal will eat it. The plant is doubly valuable from the seeds yielding a fine clear limpid oil for burning purposes, sample of which I also forward. It takes half an hour to dye a whole t'han of cloth. An oil obtained from the seeds of the plant yielding the green dye, and expressed in the ordinary bazar fashion in the common kolu, has a beautiful colour, limpid, and burns well. This plant is the Jatropha glandulifera. See Dyes; Rhamnus.

GREENHEART, Nectandra Rodiœi, *Schk.*, a remarkably hard timber of British Guiana, classed among the first eight woods at Lloyd's. It might be introduced into India.

GREENSHANKS of India, of the genus Totanus, family Scolopacidæ. T. glottis and T. stagnatilis are known. T. fuscus and T. calidris are the redshanks of India.

GREENSTONE, a volcanic rock common in the Peninsula of India. Some of it is exceedingly hard and difficult to work, but it takes a most beautiful and durable polish, as in the magnificent mausoleums of Golconda, the tombs of Hyder Ali and Tipu Sultan at Seringapatam, parts of the temples at Bijapur, and in many of the sculptures of the Karnatic pagodas. It is much used for building and ornamental purposes in Madras, for round millstones, pestles and mortars, door-posts, lintels, etc. Greenstone dykes of the Peninsula break through the clayslate of the eastern ranges of the Ceded Districts, in many places convert it into flinty slate, or turn it to a crystalline or hornblendic rock, whilst the dyke acquires a distinctly slaty structure, and so much modified in mineral character as scarcely to be distinguished from the altered clayslate of the vicinity.—*Carter's Geol.*

GREGORY ABUL FARAGIUS, the name by which Europeans designated Mar Gregorius.

GREVILLEA ROBUSTA, *Cunningham*, a noble tree, the silk oak of Moreton Bay in Australia; attains the height of 50 to 70 feet, and a circumference of 6 to 8 feet. Its timber has a beautiful grain, and is used for staves of casks.—*G. Bennett.*

GREWIA, a genus of plants of the natural order Tiliaceæ, the linden tribe. In the East Indies the principal species are:—

abutilifolia.	microcos.	sclerophylla.
Asiatica.	multiflora.	sepiaria.
calophylla.	occidentalis.	sinuata.
columnaris.	oppositifolia.	trichodes.
denticulata.	paniculata.	tiliæfolia.
floribunda.	pilosa.	ulmifolia.
humilis.	polygama.	umbellata.
elastica.	populifolia.	vestita.
hirsuta.	rotundifolia.	villosa.
lævigata.	salvifolia.	viminea.
microstemma.	sapida.	

The bark of G. oppositifolia is employed in the Himalaya for making ropes; and G. elastica, Dhamnu of the natives, is valued for the strength and elasticity of its wood. Cattle are fed on the leaves of some species. The pleasant-tasted sub-acid fruit of several species is eaten by the natives of India, but principally used for making sherbet. G. affinis, rigida, and salicifolia, *Stocks*, are trees of Sind, the edible fruits of which are called gangi

or gango, which might be improved by cultivation. At Tavoy, when vessels require spars, they are usually furnished from a small tree which grows on the seaboard, belonging to this genus. The Mai-va of the Burmese in Tavoy, and the Tha-ran of the Burmese of Moulmein, are species of Grewia. The wood of a species in the Madras Provinces makes good walking-sticks.—*M.E.J.R.; Eng. Cyc.;] Mason; Voigt; Roxb.; Gamble.*

GREWIA ASIATICA. *Linn.*

Dhamni, Falsa, . . HIND. | Dowaniya, . . . SINGH.
Pharaho, ... SIND. | Putiki, ... TEL.

Grows in the Peninsula of India, in Bengal, Northern India, and the Panjab, and is a large tree of Pegu, like G. floribunda, but not so plentiful. It is commonly cultivated in the plains of the Panjab for its pleasant, subacid, small berry-like fruit, eaten, and used for making sherbet. A spirit is said to be distilled from it, and the fruit is much prized by Mahomedans, who prescribe it to cool the body in fevers. Cultivated at Ajmir, both large tree and small bush varieties; the large tree is very beautiful when in new foliage. The fruit, containing one or two small stones, is generally made into sherbet by pouring boiling water on it, and when cool adding sugar to the taste. The plants are grown readily from the seed. They are generally cut down almost to the ground in November, and even the leaves are burnt round the stalks, after which the roots are opened and manured, and watered occasionally, when new shoots spring out, and the fruit is borne near the axilla of each leaf; when of a dark purple, they are ripe and fit for use. The appearance of its leaves has caused Europeans to mistake it for the hazel. The leaves and buds are officinal. In the Panjab there are two kinds, one sweet, called Shakari, and other acid, Sharbati. G. Asiatica and G. tiliæfolia both yield a useful bast. Wood white colour, and adapted for every purpose of house-building.—*Roxb.; M'Cl.; Stewart; Ainslie; Irvine; Riddell; Cleg. Rep.; Powell.*

GREWIA BETULÆFOLIA. *Juss.*

Gangi, Inzare, TR.-IND. | Khircha, . . . TR.-IND.

A small shrub growing N.W. from Delhi, on the hills beyond the Indus, and up to 3000 feet on the Salt Range. Its small tasteless fruit is eaten by the natives.—*Stewart.*

GREWIA FLORIBUNDA. *Wall.*

Myat ya, ... BURM. | Ta-yau, ... BURM.
Mya ya gyee, . . ,, |

A very common tree throughout the Rangoon, Pegu, and Tounghoo districts. It is a good serviceable timber for all ordinary purposes of house-building. The bark affords a coarse, strong fibre, not much employed, however, by the Burmese.—*Dr. M'Clelland; Cal. Cat. Ex.*, 1862.

GREWIA HOOKERII. *M'Clelland.* Phet-woon, BURM. Attains a girth of about 3 to 4 feet, and grows up tall and remarkably straight. It is found with teak in the forests of Pegu and Tounghoo. Wood white coloured, and adapted for every purpose of house-building,—*M'Cl.*

GREWIA MICROCOS. *Linn.*

G. ulmifolia, *Roxb.* | M. mala, *Ham.*
G. affinis, *Lindl.* | M. Stauntoniana, *G. Don.*
Microcos paniculata, *L.* | Arsis rugosa, *Lour.*
Mya-ya, ... BURM.

A shrub in the Peninsula of India, and found as a small tree on elevated ground of British Burma. Wood not used. A cubic foot weighs 51 pounds.—*Dr. Brandis, Cal. Cat. Ex.*, 1862.

GREWIA OBLIQUA. *Gibson.*

Darsook mara, . . CAN. | Damun, ... MAHR.

A small tree of Canara and Sunda, found mostly below. Wood used in agriculture, house-posts, etc.—*Dr. Gibson.*

GREWIA OPPOSITIFOLIA. *Buch.*

Daman, ... HIND. | Pastu-wanna, SIND., PANJ.
Bihull, Biul, SIND., PANJ.

Grows in the Kheeree pass, in the Dehra Doon, and in the Sutlej valley between Rampur and Sungnam, at an elevation of 5000 feet. The branches are periodically cut in winter time as provender for the cattle. Its inner bark is employed in the Himalaya for cordage and coarse cloth, and a kind of paper. The wood is tough and elastic, valued for handles and shafts and bangy sticks, and for the ring for supporting the seat of the single-rope bridge. The leaves largely serve as fodder wherever it is common, and are said to increase the quantity of milk. The bark is made into sandals, etc.—*Roxb.; Royle; Cleghorn.*

GREWIA ROTHI. *D. C., W. and A.*

G. salvifolia, *Roxb.*

Bather, Bekhar, . PANJ. | Siri jana, ... TEL.
Garles, Nikki, . ,, | Jibilika chettu, . . ,,
Kolup', ... TEL. | Tadika chuvva, . . ,,

A tree of the Panjab, Circars, and of the Cuddapah Nullamallay; has a light ash-coloured wood, with a straight grain, hard and strong; is much used and very serviceable, and makes good walking-sticks.—*Capt Beddome; Mr. Latham.*

GREWIA SPECTABILIS. *M'Cl.* Phet woon, BURM., Very plentiful; attains a girth of about 3 to 4 feet, and grows up tall and remarkably straight, with teak, in the forests of Pegu and Tounghoo. Wood white coloured, and adapted for every purpose of house-building.—*M'Cl.*

GREWIA TILIÆFOLIA. *Roxb.*

G. arborea, *Roxb.* | G. elastica, *Royle.*
Thadsal, Butale, . CAN. | Tharra, Thada, . . TAM.
Dhaman, . . . HIND. | Charachi, ... TEL.

A large and very common tree all over India and Ceylon. It ascends the mountains to about 4000 feet, and is often of large size in favourable localities. The berries are eaten, having an agreeable acid flavour; the timber is highly prized for strength and elasticity, and is used for building purposes, bows, buggy shafts, walking-sticks, and a variety of other uses. It is light and rather soft, flexible and fibrous, coarse-grained and durable, of a light pinkish colour, turning to light-brown, and easily worked; unseasoned it weighs 45 to 50 lbs. the cubic foot, and 34 lbs. when seasoned; its specific gravity is ·544. The leaves make a good fodder, and the bark, like that of all the Grewias, is used as cordage.—*Beddome, Roxb.; Voigt; Wight; Gibson; M. E. J. R.*

GREWIA VESTITA. *Wall.* The dhaman.

Gr. elastica, *Royle.* | Gr. Asiatica, *Linn.*
Tang-li, ... CHIN. | Pin-ta-yau, . . . BURM.
Farri, Phalwa, . . HIND.

A tree, 15 to 20 feet high, found in the Sutlej valley between Rampur and Sungnam, at an elevation of 4000 feet; common in the Himalaya at moderate elevations, and in Kimmedy, Ganjam, and Gumsur, also in China. Its timber is highly valued for its strength and elasticity, and much used for bows, buggy shafts, and bangy

sticks. Its fruit is used to make sherbet. In China, the young branches, leaves, and berries are used in dyspepsia and diarrhœa. In the N.W. Himalaya, the branches are periodically cut in winter time as provender for the cattle.—*Cleghorn; Royle's Hl.; Smith.*

GRIFFITH, WILLIAM, F.L.S., a medical officer of the Madras army, author of numerous works on Indian botany. He accompanied the army which marched in 1838-39 from Sind through Quetta and Kandahar to Ghazni and Kābul. From Kābul he crossed the chain of the Hindu Kush to Bamian and Singhan, and spent some time in the Kuner valley; his collections there amounted probably to about 1000 species, many of which are deposited in the Royal Herbarium at Kew. His collections from Malacca, Tenasserim, the Khassya mountains, and the whole Assam valley, Mishmi and Naga Hills, and Upper Irawadi, Calcutta, Bhutan, Simla, Sind, and Afghanistan, are probably not under 9000 species, which is by far the largest number ever obtained by individual exertions. He also made a collection of birds in Afghanistan. His posthumous notes and journals were published in Calcutta, edited by Dr. M'Clelland, under the auspices of the Indian Government. A mural tablet, erected to his memory in the cathedral church of Madras, says he was born at Ham, in the county of Surrey, March 1810. He had attained to the highest eminence in the scientific world, and was one of the most distinguished botanists of the age. He acquired his knowledge by personal investigation in the different provinces of British India and in the neighbouring kingdoms, from the banks of the Helmand and Oxus to the Straits of Malacca, where, in the capacity of Civil Assistant Surgeon, he died 9th February 1845, in the 35th year of his age, and the 13th year of his public service in India. 'His early death is deeply deplored by numerous private friends; and his loss to the cause of science elicited a public and emphatic expression of regret from the Governor-General of India. This tablet is erected as an humble tribute to his memory, by a few of his medical brethren of the Madras service.'—*Hooker f. et Thomson.*

GRIGI, Gurji. BENG., HIND. A Christian church, corruption of Ecclesia.

GRIHA. SANSK. A house.

Griha Kutumbine, literally, the head of the house or of the family.

Grihast'ha, SANSK., a Hindu married householder, from Griha, a house, and St'ha, to remain.

Grihast'ha-Dharma, SANSK., from Ghrihast'ha, situated in a house, and Dharma, religion.

Griha-Yajna, SANSK., domestic worship, especially the oblation of clarified butter on the household fire.—*W.*

Grihya, the sacred fire or altar on which it is kept, first lighted by a Brahman husband on the day of his marriage.—*Müller.*

GRIMM, JACOB, author of Deutsche Mythologie, published 1835; under the designation Teutonic Mythology, it was translated from the 4th edition, with notes and appendix, by James Stephen Stallybrass.

GRINDSTONES.

Meule, ... FR.	Mola, ... IT.
Chikki, ... HIND.	

The natives of India prepare a lap or grindstone composed of shell-lac as its basis, and corundum powder or other hard mineral as the grinding material. In Coimbatore, persons of the barber caste are the manufacturers of these. The stone being pounded and reduced to the form of fine-grained gunpowder, is heated in an earthen pot (chatty). The lac is then added, and the two stirred together until the mass is of the consistence of dough, when it is turned out, and beat and kneaded into the required shape. Not using a mould, the operation is tedious, and the finished article, when completed, not by any means of first-rate excellence. The principal objection to them seems to be the extreme hardness, which renders them less effective than if the lac, by a small admixture of a softer substance, were rendered somewhat more yielding. As made there, it is a rather rude though durable machine. At the Hunsur farm, where pearl barley was prepared, English grindstones for making it required frequent renewal, but a lap of this description had been in use five years. The stone used in Coimbatore is powdered coarse garnet sand, found in the beds of the neighbouring hill streams. The corundum stones met with for sale in the bazars are usually small, generally more rounded and water-worn on the edges, as if collected in the beds of mountain streams, from among the pebbles they bring down.

Coarse grindstones are found at Verdachellum in S. Arcot, Triputty, and Ootramaloor in Chingleput, Kurse Mungalum near Vellore, Woontimetta and Chellumacoor in the Cuddapah district, and Podelay and Woodingherry in Nellore. Hard gritty kinds, like the bhurrstone of France, occur in the Pedda Redapully Taluk of Nellore, and near Ghooty. Some of the sandstones of the Guntur, Bellary, Madura, and Mysore districts are very similar to those used as grindstones and flour-mill stones in Europe. Good dry whetstones are those of Nuggur, Matoor hill in Guntur, Triputty, Arnee, and Needacheria in Bellary. Fine-grained sandstones of a sharp cutting quality occur at Gootemokoda and Dyda in Guntur, at Chellumacoor and Chettywarreepully in Cuddapah, and in the Pedelay Taluk and Woodingherry Hill in Nellore. A stone resembling the Ayrstone or snakestone occurs at Koopookonda, eight miles west of Vinacondah in Guntur. Good substitutes for Turkey stone occur at Cuddapah, Woontimetta, Chellumacoor, and Humpsagur; and varieties of green and grey granular felspar at Seringapatam, Nellore, and on the banks of the Godavery. The latter are well suited for putting a fine edge on razors and gravers. Hones, silicious and slaty limestones of every quality, accompany the extensive beds of lithographic marble near Kurnool, Guntur, Bellary, Datchapilly, and Gooty.

Grinding of grain in India is still done by the hand-mill, as in Isaiah xlvii. 1, 2, Matthew xxiv. 41.

GRISLEA TOMENTOSA. *Roxb.*

Lythrum fruticosum, *L.*; Woodfordia floribunda, *S.*

Dhae, Dhub, Dhanga, BENG.	Agni-jwala, . . SANSK.
Dhaiti, Dhauen, BOMBAY.	Dhatri-pooshpika, . ,,
Chota dhaon, . . HIND.	Dhataki-kusumamu, TEL.
Dhai, Dhau, Dhawa, ,,	Gadda-pisinka, . . ,,
Tawi, Gul-dhawi, . ,,	Gaji, Godari, . . . ,,
Gul-bahar, . . . ,,	Rayyi pappu jaji, . ,,
Jave, ... PUSHTU.	Jateko, ... URIYA.

This very beautiful flowering plant is a shrub or small tree, and is found in the islands of the Indian Ocean, in China, and in every part of the continent of India, especially in the jungly tracts

at the foot of its several ranges of mountains. It grows in the N.W. Himalaya up to 4000 feet, is common in exposed places in the Maturatte and Oova districts of Ceylon up to an elevation of 4000 feet, and is very common in the Prome district. Its bright red calyx retains its colour till the seeds are ripe, gives the whole plant a very showy appearance, and points it out to the collectors of its flowers, which form an article of commerce, and are used for a red dye. In the bazars of Bengal they are found in a dry state, under the name of Datoke. Sheep-skins steeped in an infusion of the dried leaves take on a fine red, of which native slippers are made. The dried flowers are employed in N. India, under the name of Dhauri, in dyeing with morinda bark. In Kandesh the flowers form a considerable article of commerce, inland, as a dye. It grows abundantly in the hilly tracts of the N. Circars. Its gum, called Dhaura or Dhau-ka-gond, is brought from Mewar and Harowtee, and is abundant, white in colour; and, like the katira and tragacanth gum, swells in water. In cloth-dyeing it is applied to those parts that the dye is not wished to touch. It is eaten in Luddoo; one maund costs ten rupees. Its wood is used for fuel, and by liquor distillers for fermenting liquor; its leaves are used in infusion as tea.—*Irvine; O'Sh.; M'Cl.; Stewart; Cleg.; Thw. Zeyl.*

GRITACHEE. Sansk. In Hindu mythology, a celestial courtesan, from Ghrita, clarified butter, and Anch, to worship.

GRITSA-MADA, the author of many hymns in the second mandala of the Rig-Veda.

GROBAGAN is in Burma. Here, in the limestone district, is a mud volcano, 16 feet in diameter. The black mud every two to five seconds bubbles up and subsides; it rises to a height of 20 to 30 feet, then explodes with a dull noise, scattering a shower of warm black mud in every direction. Round about are warm brine springs, from which salt is extracted. Its eruptions are most frequent in the rainy season. It is called Kuwu, the place of abode; and an old legend is, that it is the residence of a monster snake, whose writhings cause the eruptions.—*Oldham in Yule's Embassy.*

GROSE, author of Voyage to the East Indies, with an Account of the Mogul Government, and of the Mahometan, Gentoo, and Parsee Religions, their Customs and Antiquities, London 1772.

GROSSULARIACEÆ, the currant worts or currant tribe of Lindley. They are unarmed or thorny shrubs, arranged in five genera, one of which, the genus Ribes, occurs in India. R. grossularia is the gooseberry; R. rubrum is the red currant, and R. nigrum is the black currant. Dr. Royle regards the Himalayan Ribes as a distinct species, and names it R. Himalense.—*Voigt.*

GROUND FISH, the Bora-chung of Bhutan. It inhabits the jhils and slow-running streams near the hills, but lives principally in the banks, into which they penetrate from one to five or six feet, and are found generally two in each chamber, coiled concentrically like snakes; the entrance is generally a few inches below the surface, so that the fish can return to the water at pleasure. It is believed that they take possession of holes made by land-crabs. The bora-chung would appear to be a species of Ophiocephalus, probably the O. barka described by Buchanan as inhabiting holes in the banks of rivers tributary to the Ganges.—*Dr. Campbell; Tennant's Ceylon.* See Fish.

GROUND-NUT, Earth-nut; Japan, China, pulse.

Bhoot mung,	. . Beng.	Mani-manoti,	. . . Sp.
Mung phalli,	. . ,,	Cacahuete,	 ,,
Pindar nut,	. . . Eng.	Ver kadale,	. . . Tam.
Manilla nut,	. . . ,,	Veru shanagalu,	. Tel.
Bhoysing,	. Guj., Hind.		

The ground-nut is the fruit of the Arachis hypogea. The plant has somewhat the appearance of the dwarf garden pea, though more bushy. It is cultivated in the S. of Europe, largely in America, Africa, Asia, Australia, and the Archipelago, and is named from the circumstance of its introducing its fruit or pod into the earth, for the purpose of ripening its seed. The flowers, leaves, and stems are produced in the ordinary manner seen in the pea tribe. When the yellow flower has withered and the seed fertilized, there is nothing left but the bare stem which had supported it. This stem, in which is the germ of the future fruit and pod, now grows rapidly in a curved manner, with a tendency to arrive shortly on the surface of the ground, into which the now naked stem penetrates several inches. In this obscure position the fruit takes its ripened form, and is either gathered from its hiding-place, or left to the future season, when its time of rising into new existence calls it from its natural position. When mature, it is of a pale yellow colour, wrinkled, and forms an oblong pod, sometimes contracted in the middle; it contains generally two seeds, a valuable article of food in the tropical parts of Africa, America, and Asia. They are sweetish and almond-like, and yield an oil when pressed, not inferior in quality to that obtained from the olive. The leaf resembles that of clover, and, like it, affords excellent food for cattle. The cake, after the oil is expressed, forms an excellent manure. The Arachis seeds are usually sown in the dry, warm weather from May to June, and are placed at the distance of eighteen inches from each other. Insects are fond of them; and if the season is cold and unfavourable to them, or the growth retarded, they become musty and bad, or are eaten by insects. In some parts of America it yields from 30 to 80 bushels of nuts per acre. On the western coast of Africa it is planted to a great extent. In South Carolina the seed is roasted and used as chocolate. The leaves are used medicinally; it is greedily devoured in the green state by cattle. Two varieties are grown in Malacca, the white seed and the brown seed; and also in Java, in the vicinity of sugar plantations, the oil-cake being used as manure. It is there known as Katiang. The seeds are consumed as a cheap popular luxury, being half roasted, and then eaten with salt.

Ground-Nut Oil, Manilla nut oil. This valuable oil is obtained by expression from the ground-nut, and, under favourable circumstances, the Arachis will produce half its weight of oil. When heated and pressed, the quantity is very considerably increased. This oil is good for every purpose for which olive or almond oil is used. For domestic purposes it is esteemed, and it does not become rancid so quickly as other oils. In lamps, the brilliancy of its light is superior to that of olive oil, and its durability is seven minutes per hour beyond the combustion of the best olive oil, with the additional advantage of scarcely any smoke. Under the term ground-nut oil, or Manilla oil, there was exported from the Madras Presidency, in the four years 1852-53 to 1855-56, chiefly to the United Kingdom, Bom-

bay, and the Indian French ports, to the amount of 334,024 gallons, valued at Rs. 2,12,896. 1950 parts of seed, separated from their coverings and blanched, give 1405 of kernels, from which, by cold pressure, 703 parts of oil are procured. For machinery the naval steam cruisers on the African coast adopt it. Ground-nuts from the river Gambia and from Sierra Leone, at £10 per ton, sell in London at £11. From France the oil finds its way over the world in the shape of olive oil,—the skill of the French chemists enabling them to imitate the real Lucca and Florence oils, so as to deceive the nicest judges.—*Eng. Cyc.; Ed. Phil. Mag.; Simmonds; Jury Rep. Mad. Ex.; Useful Plants; O'Sh.*

GROUND RATANS. The excellent walking-sticks known to the British under this name, are made from the Rhapis flabelliformis, which grows in Lin-kin and Southern China. See Calamus.

GROVES of trees were planted by the ancient Egyptians within the courtyards of their temples, but the law of Moses (Deuteronomy xvi. 21) forbade the Hebrews to plant any tree near the altar of the Lord, though the Alexandrian Jews, in later times, planted groves near their synagogues. Individual trees, throughout India, are regarded as habitations of spirits, both good and bad, and noon is the particular period at which their evil influence is believed to be exercised. In the Fiji Islands a fine grove exists in the Rewa district, near the mission station of Mataisuva. These sacred groves and trees are not worshipped as gods, but, as in the Odin religion, are looked upon as places where certain gods had taken up their abode. Hindu kings formerly planted mango groves as acts of merit, and gave them to Brahmans or to the public.—*Fiji Islands; Ward*, iii. p. 107.

GRUB, a term familiar to coffee planters in Ceylon and the Peninsula of India, applied to insects which injure the coffee plant and coffee berry. Mr. Nietner tells us that the brown and white bug and the black and white grub are the only important enemies of the coffee tree, and that the destruction caused by Arhines, Limacodes, Zeuzera, Phymatea, Strachia, and the coffee rat, appear to be of a more local and occasional nature.

Bug.—The appearance and disappearance of the coffee bug, he tells us, is most capricious. It comes and goes,—now rapidly spreading over a whole estate, now confining itself to a single tree amongst thousands; here leaving an estate in the course of a twelvemonth, there remaining permanently; sometimes spreading over a whole estate, sometimes attacking a single field, then leaving it for another and another. But the white bug prefers dry, and the brown, damp localities, the latter being found more plentiful in close ravines and amongst heavy rotting timbers than on open hill sides, and it is probably to this predilection that the shifting of the insect is attributable. The bug of course seeks out the softest and most sheltered parts of the tree, the young shoots, the undersides of the leaves, and the clusters of berries. The injury done by the white bug seems more severe than that from the brown, but, not being so plentiful as the latter, it is of less general importance. The white bug is especially fond of congregating amongst the clusters of berries, which drop off from the injury they receive, and trees often lose their entire crop in this manner. The injury produced by the brown bug is the weakening of the tree, and is thus more general, but the crop does not drop off altogether nor so suddenly. With white bugs on an estate the crop can hardly be estimated; with brown bugs it can.

White Grub.—Under this name are included the larvæ of various Melolonthidæ, the cockchafers of Ceylon, which do much harm to coffee plantations, young and old, by eating the roots of the trees. Mr. J. L. Gordon of Rambodde considers the white grub to be by far the greatest enemy of the coffee trees which the planter has to contend with, as he never knew a single tree recover after their attack; and he adds that they had destroyed at Rambodde, in two years, between eight and ten thousand trees of fine old coffee. Mr. Gordon used to dig up the soil at the foot of the trees and take out such grubs as he could find.

Black Grub.—The larvæ of the moth called Agrotis segetum is the very destructive black grub. This pest is about an inch long, and is most abundant from August to October. The caterpillar lives in the ground, but comes out at night to feed, and is very common and injurious. They attack not only coffee trees, but all sorts of vegetables and flowers, and are very destructive to gardens and in the field, as they eat everything that is artificially raised, despising grass and weeds. They generally appear only on certain fields, and will not go over an estate. The insect is not confined to Ceylon; its ravages are well known in India, at the Cape of Good Hope, and in Europe, where it injures the grain and beet-root crops. In Ceylon it only attacks young coffee trees, gnawing off the bark round the stem just above the ground. Where the trees are very small, they are bitten right off, and the tops sometimes partially dragged under the ground, where the grubs may easily be discovered and dislodged. The damage which they inflict on plantations may be estimated, when it is mentioned that Mr. Nietner lost by them in one season, in certain fields, as many as 25 per cent. of the young trees he had put down.—*Nietner on the Enemies of the Coffee Plants.* See Bug; Coffee; Leaf Disease.

GRUEBER and Dorville, two Jesuit fathers, who in A.D. 1661 travelled from China via Tibet. They were the first Christians from Europe who are known to have penetrated into the populous parts of Tibet. Marco Polo in his journey in the 13th century, was to the N.W. by the sources of the Oxus.—*Prinsep, Tibet*, p. 11.

GRUNDLEY. John Ernest Grundley, an eminent missionary at Tranquebar, to whom George I. of England, in a letter dated 23d August 1717, addressed an autograph letter.

GRUNTH is the name of the books of the Sikh religionists. Grunt'hee, from Gruntha, a book, one who is learned in the Grunth. The Adi Grunth compiled by Nanak and his immediate successors was translated by Professor Trumpp. Nanak quotes largely from Kabir. The Grunth of Guru Govind Singh of a later date is written in pure Hindi of that date.—*Cust.*

GRUS, a genus of birds belonging to the family Gruidæ, in which are the genera Grus and Anthropoides. The words Crane, Grus, Geranos, with the Hindustani Saras, Kakarra, Karrach, etc., all have reference to the loud trumpeting voices of the birds in question, which form a very distinct group by themselves, that should be confounded with no other. The so-called gigantic crane or

adjutant is not a crane, and can merely clatter its mandibles together. The word Crane is often used vaguely.

Grus Antigone, *Linn.*, Saras, Sarhans.

G. torquata, *Vieillot.* | G. orientalis, *Pallas.*

The saras is found throughout the greater part of India and Burma. It breeds on some island or spot nearly surrounded by water. Its fine trumpet call, uttered when alarmed or on the wing, can be heard a couple of miles away. In the territories of Holkar it is almost venerated. It breeds south of the Himalaya, and birds too young to fly are occasionally brought for sale to Calcutta. Turner, describing the lake Ramtchu, says prodigious numbers of the saras are seen here at certain seasons of the year. Instances are known of the saras breeding in captivity. A pair was allowed the range of a large walled garden (protected from jackals), containing shallow inundated enclosures for the growth of rice. Their nest was commenced under water, and raised for some inches above the surface; the eggs are two in number, about 3¾ inches long by 2½ inches broad, of a bluish-white, with a few distantly-placed rufous specks and blotches.

Grus Australasiana, *Gould*, is the native companion of the Australian colonist; has more of the aspect of G. vulgaris, *Pallas*, but is considerably larger. It is only found in N. Australia and N.S. Wales. It evinces great aptitude for domestication, and gets its name native companion from the docility with which it accommodates itself to the society of man.

Grus Cinerea, *Bechstein.*

G. antigone, *Sykes.* | Ardea grus, *Linn.*

Common crane, . ENG. | Kalam, . . . MAHR.
Kalang, ... HIND. | Kulangi, . . . TEL.

The crane of Europe, Asia, N. Africa, is migratory; now rare in Britain. In Scandinavia it usually breeds in extended morasses, far away from the haunts of men. It makes its nest, consisting of stalks of plants and the like, on a tussock, and often amongst willow and other bushes. The female lays two eggs. The European crane is equal to any in the majesty of its gait, and even in the beauty of its plumage, if we except the Manchurian. It is the most widely distributed of the whole family; visits India in numerous flocks during the cold weather. In the Dekhan and Central India it is generally seen in parties of from eight to twenty, but sometimes in much larger numbers, especially in the N.W. Provinces. It feeds chiefly on grain, and commits great havoc in the wheat-fields and rice-fields.

Grus Leucogeranos, *Pallas*, is the large white crane; visits several parts of N.W. India, and the interior of the Himalayas in the winter season.

Grus Monacha, *Temminck*, is from N.E. Asia and Japan, as also is Grus vipio, the white-necked crane, an ornamental species.—*Blyth.*

GRYLLOTALPA VULGARIS, Mole cricket.

Goorghoorga, . . HIND. | Ghoorghooria, . HIND.

Occurs in the temperate and tropical regions of the Old World. It is of nocturnal habits, and is a destructive creature of all vegetable products. In Dinapur and Bankapur, in November and December, it attacks the young poppy plant.

GRYLLUS CAMPESTRIS, in China, about midsummer are made to fight with each other. They are sold at rates from a few cash to tens of dollars, and there is much gambling and betting on them amongst all classes. Gryllus migratorius is the common locust. There are, however, other locusts, one of them of a red colour; species of Gryllus (Ghudya and Phunga, HIND.) attack the young poppy plant in November and December in Lower Bengal.

GUAIACUM OFFICINALE, Lignum vitæ.

Gayac, Bois-saint, . FR. | Guajaco, ... IT.
Pockholm, . . . GER. | Guagaco, ... SP.

This plant was introduced into the Madras Gardens, and fou d to thrive remarkably well. It is a native of Jamaica and Hispaniola. Both the bark and wood are used as sudorifics in the treatment of gout, rheumatism, and chronic or secondary syphilis. The resin is obtained by spontaneous exudation.

GUALAMA, the Singhalese devil-bird, supposed to be an owl or a night-hawk. Its shout is clear, resembles that of a human being in agony, and can be heard to a great distance.—*Tennant.*

GUANA, iguana lizard.

Zib, ... ARAB. | Ghoda-sala, . . SANSK.
Ghore-pore, HIND., DUKH. | Udumba, . . TAM., TEL.
Biyawak, Bewak, MALAY. | Udumu, . . ,, ,,
Manuvak, ... ,,

The iguana, a reptile of India, found about old walls and ruinous buildings. It is about two feet long; tail long, round, and tapering; back, tail, and throat are serrated; its whole surface is covered with shining scales. The flesh is eaten by the Mahomedans of India, and in the West Indies it is salted and barrelled for exportation. In India the body of the dried guana is made into an electuary, with a certain portion of ghi, and used as a strengthening medicine in consumptive complaints. An animal oil is obtained from it.—*Faulkner.*

GUANO, the accumulated dung of sea-birds, found on many islands. The white layer of the first year is considered the best. A variety of guano found in the limestone caves on the Tenasserim coast is much used as a manure by European and Chinese planters in Pinang and Province Wellesley. M. A. Ramonde, Professor of Natural History at Lima, was sent in 1853 by the Peruvian Government to the Chincha Islands. In some places he found the guano deposit 30 metres in depth. From the bodies of animals as well as from various manufactured articles found in it, he concluded that the deposit belongs to the present epoch of the earth's history. The birds observed during his visit were—Pelecanus majus, *Molin;* Carbo Gaimardii, *Lesson;* C. albigula, *Brandt;* Sula variegata, *Tschudi;* Spheniscus Humboldtii, *Meyen;* Plotus anhing, *Linn.;* Rhyncops nigra, *Lem.;* Larus modestus, *Tschudi;* Puffinaria Garnotii, *Lesson;* Sterna inca, *Lesson.* Some of them only appear at the breeding seasons. The pelicans do not seem to produce much guano, as they almost always inhabit the cliffs, and their excrement falls into the ocean. The same may be said of the species of Carbo. The species of Sula contribute more to the deposit, their number being greater, and their habitations being more in the interior of the islands. The species of Plotus and Rhyncops are very rare, those of Larus more numerous. The Sterna only visit the islands to lay their eggs, but their numbers are so very great that they must contribute in a great measure to the formation of guano. The Spheniscus abounds in the southern island,

which is inhabited. These birds not being able to fly, hollow out habitations for themselves in the guano. The birds which produce the largest quantity of guano are the Puffinaria; their number is incalculable.—*L. Institut.* May 1856; *Ed. New. Phil. Jour.* November 1856.

GUARAPO, a drink prepared from sugar-cane.

GUARDAFUI, the Ras Jard Hafūn of the Arabs, meaning the Highland or Crest of Hafun. A cape or headland of the coast of Africa, nearly opposite Aden. It is the Opone of Ptolemy.

GUARD FISH, eaten at Penang. It is the Hemiramphus Russelli, *Cuv.*, the Toda pendex of the Malays. See Fish.

GUAREA TRICHILIOIDES. Its bark is a violent emetic and purgative. Wight in Icones gives G. paniculata.—*W. Ic.; O'Sh.*

GUATTERIA, a genus of plants belonging to the Anonaceæ, a tropical order of plants, chiefly inhabiting America and the East Indies. There are nine species of Guatteria known in India,—

anonæfolia, Tavoy.	longifolia, India, Java.
cerasoides, India.	sesquipedalis, Khassya.
cinnamomea, Singapore.	suberosa, India, Khassya.
badajamba, Chittagong.	villosa, Monghir.
fasciculata.	

Guatteria Cerasoides, *Duval.*

Uvaria cerasoides, *Roxb.*	Polyalthya ceras., *Benth.*
Hoom, ... MAHR.	Chitta duduka, . . TEL.
Nulœli? maram, . TAM.	Chilka? dudugu, . ,,
Duddaga, Dudduka, TEL.	

This moderate-sized tree grows in the Bengal and Madras Presidencies, and is common in the Bombay coast and Ghat forests. It may be easily recognised by its great straightness and handsome appearance. Its wood is reddish and close grained, useful in carpentry, as well as for naval purposes, as boat masts, small spars, etc. The natives on the Godavery do not use it, and say that it is soft.

Guatteria Longifolia, *Wall., Willde.*

Uvaria longifolia, *Roxb.*	Polyalthia longifolia, *Bent.*
Debdari, . . . BENG.	Deva-daru, . . . TAM.
Mast tree, . . . ENG.	Asoka, Asokam, . TEL.
Asok maram, . . TAM.	

A very handsome, erect growing, large tree of India and Java, but with a soft and useless wood. It is much grown in Madras as a highly ornamental avenue tree, and it should be planted in avenues more than it is at present. The true asok, Jonesia asoka, is rarely seen in Southern India.—*Roxb.; Voigt; Wight; Beddome.*

GUAVA TREE, White and Red.

Psidium pomiferum, *Linn.*	P. pyriferum, *Linn.*
Jam, Jam amrood, HIND.	Jambu klampuk, MALAY.
Safri am, ... ,,	Loue kiae, . . . SIAM.
Jambu biji, . . MALAY.	Goia, . . . TAM., TEL.

There are two kinds of guava fruit largely grown in India and in the islands of the E. Archipelago, —one white within, the other red. The wood is extremely close grained, tough, and compact; is preferred for making wooden mallets, and other things required to stand hard knocks; and it is also used for wood engraving. Loudon says 'the fruit ripens freely in Britain, but is of little merit.' The white guava is the species more usually cultivated, but the red is not uncommon. —*Mason; Ains. Mat. Med.* p. 211.

GUAZUMA TOMENTOSUM. *H. B.*

G. ulmifolia, *Wall.*	Bubroma guazuma, *Willde.*
Bastard cedar, . . ENG.	Rudraksha chettu, TEL.

The Guazuma is a genus of the family Sterculiaceæ; and G. tomentosum, sometimes known as bastard cedar, the gunstock tree, was introduced by Dr. Anderson about the end of the 18th century from America. It grows in Ceylon; common in the Dekhan, pretty common about Madras. The fruit is tubercled, about the size of a cherry. Between its outer bark of sap-wood is a fibrous mass about half an inch in thickness, richly impregnated with mucilage, which is extracted by macerating for twelve hours in warm water; and is greatly employed in the West Indies and in South America in clarifying sugar, as a Kydia is in India. Its wood is light and loose grained, and of a light-brown colour, and is used for furniture, coach panels, for packing-cases, panelling, etc. It weighs about 40 to 45 lbs. per cubic foot unseasoned, and 32 lbs. when seasoned, and its specific gravity is ·512. It was largely cultivated at one time in the Madras Presidency, under the name of bastard cedar, as fodder for cattle. The fibres of its straight, luxuriant young branches were submitted to trial by Dr. Roxburgh; and while the sown hemp broke when dry with 160 lbs. and 209 lbs. when wet, that of the bastard cedar broke with 100 lbs. when dry, and 140 lbs. when wet.—*Cleghorn, M. E. J. R.; Thw.; Voigt; Riddell; O'Sh; Royle, Fib. Pl.*

GUDA, Gode, Gudi, as in Nanjangode, Methagoody, is probably from the Telugu and Karnatica Gudi, a temple, a pagoda. Gud, MAHR., a house.

GUDA, a mixed race in Sind, from Sindians and Sidi women; they were equally slaves with their mothers, and could be bought or sold at will.—*Postan's Sind*, p. 359.

GUDARA. SANSK. A beggar, so named from their carrying a metal pan containing scented wood. See Hindu; Ukhara.

GUDBA, a Kolarian tribe, numerous in the eastern part of Bastar and Jeypore, but scarce to the west of Bastar. Some of their most important words are identical with those used by the Kurku in the W., and by the Kol and Santal on the E. —*C. I. P. C. Rep.* p. 6.

GUDDEE, a tribe resembling the Ghosi. They are now mostly Mahomedans, and have a few scattered communities in Gurhmooktesur and Surawa of Meerut, and in the Rampur territory. It is not unusual to call any converted Hindu a Guddee, which is looked on by a Mahomedan as a term of reproach. A Guddee tribe occupy the Kangra Hills. *Elliot, Supp. Gloss.* See Gudha.

GUDDI PADVA, flying of paper kites at the new year on the new moon of Chaitra, about the 5th April.

GUDEER, a feast celebrated by Shiah Mahomedans. See Ghadir.

GUD'HA. HIND. An ass, a donkey. Gadheka-hal, a donkey's plough. Before the British domination in India, it was not uncommon to yoke donkeys in a plough and drive them over the ruins of a captured fort, as a mode of showing supreme contempt for the vanquished enemy. The furrows thus raised were levelled by the lohe-ki-mye, or iron harrow. Horace says (Carm. i. 16):

'Exitio gravi
Stravere, et altis urbibus ultimæ
Stetere causæ, cur perirent
Funditus, imprimeretque muris
Hostile aratrum exercitus insolens.'

This mode of wreaking vengeance has been in especial favour with eastern nations, and was

practised by Chengiz Khan and Timur with unrelenting severity. Hence the common expression, 'I shall sow barley where you now stand,' as in the vaunt of the bandit minstrel Kurroglow, at p. 138 of Popular Poetry of Persia.

Gadhe-par-Charhana, literally, to seat upon a jackass, is a punishment more commonly known by the Arabic Tashheer, publication, celebration; which is rendered by Golius, 'Per urbem duci jussit sontem in exemplum; fere asino aut camelo impositum.'—*Elliot, Supp. Gloss.*

GUDHI or Gurhi, a ceremony amongst the Mahrattas. A pole is erected on the first day of the year before the house-door, and ornamented with cloth, mango sprigs, etc.—*W.*

GUDI. TEL. A temple. This may be the word from which Pagoda has been obtained. Pai-gudi, a devil temple.

GUDIGAR. KARN. A caste at Nagar in Mysore, carvers in sandal-wood, horn, and ivory.

GUEST. Amongst several of the eastern nations, the duties of hospitality to a guest are still regulated as in ancient times. Luke x. 7 says, 'Go not from house to house;' and it would be a great offence among the Hindus if a guest, after being made welcome at a house, were to leave it and go to another. Also Luke xiv. 16, etc., 'A certain man made a great supper, and bade many.' Messengers are sent to invite guests to a Hindu feast, when not only relations, but all persons of the same division of caste in the neighbourhood, are invited. A refusal to attend is considered as a great affront. Mark xiv. 14 says, 'Where is the guest-chamber?' Respectable Hindu householders have a room which they call the stranger's room (Atit'hee-shale), and which is especially set apart for the use of guests. Lane, in his Modern Egyptians, i. p. 413, answering the question, What does a musafir (traveller) expect and receive?' says, 'By a Sunneh law, a traveller in the desert may claim entertainment for three days unquestioned.' Most Bedawi will suffer almost any injury to themselves, rather than allow their guests to be ill-treated. In the great tribe of the Bishaseen which inhabits the desert between the Nile and the Red Sea, unmarried daughters are offered to guests.

GUETTARDA SPECIOSA. *Linn.*

Cadamba jasminiflora, *L.*	Jasminum hirsutum, *Willde.*
Nyctanthes hirsuta, *L.*	
Pannir, DUKH., TAM., TEL.	Himma, ... SANSK.
Rava-pu, . . . MALEAL.	Nil-pitcha, . . . SINGH.

A small but very handsome tree, with large white and very fragrant flowers, in blossom throughout the year. It grows at Caltura and near Galle in Ceylon, and is cultivated in Indian gardens. Amongst Hindus the tree is sacred both to Siva and Vishnu.—*Roxb.; Riddell; Ain.; Thw. Zeyl.* ii. p. 153.

GUEVO UPAS, or Valley of Poison, is at the side of the volcano Papandayang, in JAVA. It is 500 feet below the run of the old crater, which is now the Telaga-bodas, or White Lake. It is a small bare place, with many crevices from which carbonic acid is poured; and many dead animals, dogs, cats, squirrels, rhinoceros, tigers, birds, and snakes, are said to be seen in it, but this has lately been discredited.—*Bikmore*, p. 53.

GUGAL, a term applied in India to the fragrant resins of several trees, also to the trees themselves. The resin, Gugalam Telugu, is also called Gugal-ka-Gond, also Indian B'dellium, and its synonyms are given as Mooql (Arabic), Raughan turb, and Aflatun. In Syrian, the Makhzan-ul-Adwyia says it is called Badliyun, which is like a corruption of *βδελλιον*, B'dellium. It is the fragrant gum-resin of Balsamodendron Roxburghii, the Amyris agallocha, a tree which is plentiful in the Ajmir Hills, and which yields a fragrant gum-resin used in sacred fumigations by the Brahmans; it is no doubt the B'dellium of the ancients. It has a similarity to myrrh; is used also in flatulencies, taken in ghi; is one of the ingredients in the incense or dhoop. The word Gugal in combination, when applied to a tree, indicates particular plants yielding resins, as Guggelam chettu, *Ægiceras fragrans, Kon.;* Guggulu or Sala is Vatica robusta; and Guggilapu chettu is Boswellia glabra.—*Elliot, Fl. Andhr.* See B'dellium.

GUGE or Hundes, 120 miles long and 15 to 60 broad, is commonly known as the plain of Tibet. It is comprised between the Himalaya and its Cis-Sutlej branch. It extends from the lakes of Manasarowar and Rakastal down the course of the Sutlej to Kanawar. It is wholly under Chinese influence. Its undulating surface is covered with an alluvial deposit, declining from 15,200 feet, the level of the lakes, to 10,000 feet at the confines of Kanawar. The Sutlej and its feeders traverse it, flowing in deep narrow ravines 1000 to 3000 feet below its mean level.—*H. f. et T.* 223.

GUGLI, a class of Brahmans at Vaishnava shrines.

GUHA or Gooha, in Sanskrit a secret place, from Gooh, to hide or to cover; hence Guhya, parts requiring to be concealed. In Hindu mythology, when the goddess Sati burst, and the gods in her womb came forth, this part of her body fell in Nepal, where, at a place called Guhyast'han, they continue to be devoutly worshipped.

GUHURWAR, also written Gaharwar, a tribe of Rajputs found in Dehra Mungulpur, Bithur, Gajmow, Kanouj, and in the Central Doab. The Guhurwar of K'hera Mungrore in Mirzapur have been converted to Mahomedanism, and those of Mahaich in Ghazipur are reckoned an inferior branch. The chief of the Guhurwar resided at Bijapur, a few miles to the west of Mirzapur, where the liberality of the British Government enabled him to keep up some show of respectability. At the time of the first occupation of Benares by the British, he was a fugitive from the tyranny and oppression of the Goutum Bhuinhar, who had expelled the Guhurwar family in A.D. 1758. The Guhurwar are recorded among the 36 royal tribes of Rajputs, and are said to be of the same family as the Rahtor, with whom it is said they never intermarry.—*Elliot, Supp. Gloss.*

GUHWARA. HIND. A swinging cradle.

GUHYAKA are cave-dwellers, Hindu demigods; the servants of Cuvera, the deformed deity of riches, and into such beings the dark souls of men, addicted in this world to selfish gratifications, transmigrate.—*Moor*, p. 108; *Wilford.*

GUI, amongst the Oraon, a sworn friendship between two girls. They each say,

'Tu aor main gui jurabi;
Amren phul lagabi.'

Then each plucks flowers and arranges them neatly in the other's hair, exchange necklaces and embrace, and give a joint feast. See Brother-making; Munh bola-bhai.

GUIA KHATAI. A Bokharian Hakim presented Dr. Honigberger with this hard, pitch-like plaster spread on a small piece of red linen, which he stated had been prepared in China, and which was capable of removing every kind of pain, simply by application. One and the same plaster serves for several cases. The form is square, three or four inches in diameter; each of them bears a Chinese seal. According to the assertion of the Hakim, its constituent parts are sweet-oil and litharge; the latter, as an impalpable powder, is added to the former. The Bokharian doctor stated that it should be applied as near as possible to the affected part. It acts as a rubefacient, without blistering.—*Dr. Honigberger*, p. 282.

GUILANDINA BONDUC. *Linn.*

Cæsalpinia bonduc, *Roxb.*	G. bonducella, *Flem.*
Nata karanja, . . BENG.	Karetti, Kulunji, MALEAL.
Gutchka, Gudgega, DUKH.	Kirbut, ... SIND.
Katkalija, . . . HIND.	Koombooroo wel, SINGH.
Katkaranga, . . ,,	Kalumawul ætiya, ,,
Katkaranj, . . . ,,	Kalichi maram, . . TAM.
Sagargota, . . . MAHR.	Gachcha chettu, . TEL.

A great thorny climber, with yellow flowers, and with long briar-like trailing and climbing shoots. It grows in the East and West Indies, and the Eastern Archipelago. The bonduc nut is an irregularly round grey seed; the almond or kernel is white, very hard, and intensely bitter; gets a blood-red colour from nitric acid. Mr. Piddington detected in the nuts, oil, starch, sugar, and resin. Bonduc nut is the commonest anti-periodic in the bazar medicines of Bengal, and it is undoubtedly one of considerable utility, especially in convalescence from fever. If it do not stop the paroxysm the first time, it seldom fails the second. The common way of exhibiting this substance is to give of the nut finely powdered and of black pepper each 6 to 20 grs. three times daily. In the Panjab, asafœtida is added to the black pepper. In Chittagong it is administered in pills, 4 grains of the pounded kernel with 4 grains of the black pepper. It is a very effectual remedy, but to make it so the pills must be given fresh. If the seeds are not broken they will keep good for years; but if broken, and the kernel kept for four or five days, they become useless as a medicine for fever. Bonduc nut oil is mentioned by Ainslie as useful in convulsions and palsy.

GUILIELMA SPECIOSA, *Mart.*, is the Piritu or Pirijao of Venezuela, the Pupumba of the Amazon district, and the Paripou of Guiana. It is a palm of an intensely hard wood; sharp needle-like spines are thickly disposed in rings or bands round its slender cylindrical trunk. The Indians subsist for months on its farinaceous fruit.—*Seeman.*

GUINDY, a hamlet and country-seat of the Governor of Madras.

GUINEA-FOWL, Numida meleagris, *Linn.*, is believed to be descended from the Numida ptilorhyncha of the hot, arid parts of E. Africa, but it has become wild in Jamaica and St. Domingo, and has there become small, with black legs. The guinea-fowl is the Bohemian of the barnyard. They are hardy and prolific, and are valuable in gardens, as they rarely scratch the ground, are eager in their search for insects, and with a scraping motion of their bill gather the seeds of grasses.—*Darwin.*

GUINEA GRASS, Panicum jumentorum. When well manured and kept clear of weeds, it grows luxuriantly, and admits of being cut every six weeks or two months. A small patch near Colombo, about an acre and a half, for 7 or 8 years supplied 3 or 4 milch cows and from 5 to 7 horses continually with all the grass required for their consumption, and latterly left a surplus, which was dried for bedding and hay. When first planted it frequently attains a height of even 9 feet; and a stalk taken promiscuously from a small patch planted in Combaconum measured 10 feet 4½ inches in length; when cut two or three times it grows thicker, but not so high. Mr. Wedderburn in Coimbatore, with the view of utilizing the washings in the municipal slaughter-house, had a piece of neighbouring waste land, in extent four acres, enclosed and irrigated by the diluted filth of the slaughter-house floor. Besides this, poudrette, consisting of night-soil and ashes, was applied. These four acres of land produce annually thirty-two tons of guinea grass, at ten rupees per ton. This nourishes bullocks better than double the weight of paddy straw at seventeen rupees per ton. It is excellent feeding for horses and cattle, and is generally preferred by them to the ordinary country grass, though horses which are hard worked seem to prefer the dry grass roots supplied by the grass-cutters. It should not be given to cattle fresh, but the supply for one day should be cut the day previous; and it should not be cut too close to the ground, but the stalk ought to be left 7 to 9 inches high. It is a good plan to move the ground between the roots every time the grass is cut, and it should be heavily manured after every three or four cuttings. It is very hardy, and may be easily propagated. It requires abundant moisture, but will not live in a soil which is at all marshy. It answers best planted in small tufts 1 foot 9 inches to 2 feet apart, which rapidly spread into stools from 6 inches to a foot in diameter.—*Spry's Suggestions*, p. 15.

GUINEA-WORM, Filaria Medinensis, *Gmel.*

Farentit, ... ARAB.	Dracunculus, . . . LAT.
Drakontion, . . . GR.	Pejunk, . . . PERS.
Naru, Narambo, . HIND.	Soungouf, . . SENEGAL.
Narampoo chalandi, ,,	

It occurs in Africa, Arabia, Persia, India, and Turkestan, most frequently appearing in the feet and legs. It has been supposed to be transmitted by means of the cyclops, a little fresh-water crustacean, received by means of the drinking water. At the end of six weeks the presence of the animal is revealed by tumours; then wounds appear, caused by the dissemination of the eggs. Gordius ornatus occurs in the Philippines.

GUITAR, a musical instrument similar to the cithera, supposed to have obtained its name from the Sih-tara, the three-stringed.

GUIZOTIA OLEIFERA. *D. C., W. Ill.*

Guizotia Abyssinica, *Cass.*	Tetragonotheca Abyssinica, *Ledeb.*
Polymnia Abyssinica, *L.*	Jagera Abyssinica, *Spr.*
P. frondosa, *Bruce.*	Helianthus oleifer, *Wall.*
Verbesina sativa, *Roxb.*	Ramtilla oleifera, *D. C.*
Parthenium luteum, *Spr.*	
Heliopsis platyglossa, *Cas.*	
Kala-til, Ramtil, . HIND.	Ulisi, Valisi, Valasalu, TEL.
Oochellu, . . . TAM.	

This plant is grown in Egypt, Abyssinia, and throughout the East Indies. It has large bright yellow-coloured flowers, and it ripens its seed in February and March. The seed in shape is like the black cummin seed, and a sweet-tasted oil is

manufactured from it, and used for nearly the same purposes as the sesamum or gingelly oil. The seeds yield about 34 per cent. of oil, which sells at about 10d. per gallon. It is exported under the name of Niger seed. It was first shipped to London experimentally in 1851. It is a favourite crop, of easy cultivation, and giving good returns.—*Mad. Ex. J. Rep. Cal. Cat.*, 1862.

GUJAR, a race in the N. W. Provinces of India, notoriously predatory, but gradually becoming more settled to habits of peaceful industry. Their former importance may be rated by their having given name to the provinces of Gujerat on the western coast of India, and to Gujerat in the Panjab. They are sometimes considered to be among the prior occupants of India, and have been so reckoned by Tod, who declares them also to be a tribe of Rajputs Sir R. Jenkins also says that in the Nagpur territory they consider themselves to be Rajputs, and that, as they are descendants from Lava, Rama's second son, they have an undoubted right to be so regarded. They must at one time have been dominant, for Edrisi, quoting Ibn Khordadbah, states that Juzr or Huzr was the hereditary title of a king as well as the name of the country. Gujar are in Kashmir, in the Panjab, and are spread all over the Dehli territory, the Upper Doab and Upper Rohilkhand, and they enumerate 84 different tribes. In Dehli the chief tribes are the—

Chumayen.	Khare.	Bursoee.	Rowal.
K'hutana.			

In the Doab—

Sookul.	Dede.	Ramayn.	Khoobur.
Bysle.	Jindhur.	Khare.	Moondun.
Mavee.	Peelwan.	Nagree.	Kudahun.
Rat'hee.	Butar	Chotkune.	Touhur.
Bhuttee.	Adhuna.	Budkana.	Goraee.
Kusounee.	Cheche	Kusane.	Kunana.
Bulesur.	Kulseean.	Rouse.	

In Rohilkhand—

Butar.	Jattee.	Poorbur.	Muhynsee.
K'hhoobur.	Motle.	Jindhur.	Kusane.
Khare.	Sooradne.		

All these tribes intermarry on terms of equality, the prohibited gotra or tribe being only those of the father, mother, and paternal and maternal grandmother. A great part of the district of Saharunpur was called Gujerat during the 18th century. By the Gujar themselves it was said to consist of three parts, and the division is known amongst them to this day, and is usually adopted in ordinary converse. In 1811 Colonel Tod's duties called him to a survey, amidst the ravines of the Chambal, of the tract called Gujargar, a district inhabited by the Gujar tribe. Turbulent and independent, like the sons of Esau, their hand against every man, and every man's hand against them, about the middle of the 18th century, their nominal prince, Suraj Mull, the Jit chief of Bhurtpur, had pursued exactly the same plan toward the population of these villages, whom he captured in a night attack, that Janmeja did to the Takshak, as described in the Mahabharat. He threw them into pits with combustibles, and actually thus consumed them. The Gujar race has largely pressed into the Central Provinces of India, and have settled down to agricultural pursuits; and those in Hoshangabad and Nemur are fair farmers. They are agriculturists in the N.W. Provinces, but, whether of the Hindu or Mahomedan faith, they everywhere prefer pasturage to the plough. The Gujuru of Kashmir are shepherd proprietors, and said to have come from Gujerat in the Panjab; they live in log houses, in recesses at the foot of the Panjal, and in the woods. The Gujar tribe in the Panjab are probably of primitive antiquity. They have not lost the pastoral habits of their race, though they devote much attention to agriculture, and they are more industrious and less predatory than their brethren of Hindustan. Many of the thieves in Hindustan are of this tribe.

In 1857, in the revolt in India, the whole of the Gujar villages around Dehli, after fifty years of compulsory quiet, broke out and plundered all over that district within a few hours of the outbreak of the mutiny. And whenever any fugitives during the mutiny came to a Gujar village, they were invariably plundered. The instant the strong arm of a government was removed, these and other predatory races resumed their ancient habits. They are cultivators and keepers of cattle and buffaloes, living in separate villages of their own, and are numerous about Dehli and in the Merut and Saharunpur districts of the Doab. They are numerous in the Panjab, on the northern frontier of British India, in Swat and the adjacent hills, and in the hills about Kashmir; and they are said to have preceded the Swat tribe as the inhabitants and owners of part of the Hazara district east of the Indus. In the hills about Kashmir the Gujar have pastoral vagrant habits. In all the northern, if not in all the Jat country, the Gujar are much mixed with the Jat, and form a considerable part of the population. They are numerous in all Northern Rajputana, and extend into Malwa and the adjoining parts of Central India as far east as Bundelkhand, one of the chiefs in which is a Gujar. The last Nagpur prince is stated to have been a Gujar, but at present there are no Gujar in Gujerat. Those located in the east in Hindustan, trace their origin from the west.

The Gujar have no resemblance to the pre-Aryan races. They are a handsome tribe, and both men and women are remarkable for their powerful figures and fair complexions. The women in particular are remarkably good-looking, and have a bold, free carriage and demeanour. Widows can re-marry. Like the Jat, they eat all flesh except that of cows or bullocks, and are particularly fond of wild hog. They drink spirits also, smoke tobacco, ganja or hemp leaves, and their women use opium, as well for themselves as their children. They are wholly uneducated, and affect to despise learning as unmanly. They are dishonest, untrustworthy, and lawless in a high degree; mulish, revengeful, and wrong-headed, professing no loyalty to any one; notorious as successful cattle-lifters, pursuing this branch of robbery with determination and skill, taking great pride in their lawless achievements, and loving to hear of past deeds.

Those to the north of Dehli are Mahomedans, but to the east and south they are sometimes half Mahomedans, sometimes half Hindus, but so very lax as to be considered a sect apart.—*C.* p. 101–123.—*Tod's Rajasthan; Elliot, Supp. Gloss.*

GUJERAT, a town in lat. 32° 32′ N., long. 74° 3′ E., in the Jech Doab of the Panjab, on the Rotas road between the Chenab and Jhelum, at eight miles from the right bank of the Chenab. It is also the name of a district in the Panjab.

Gujerat gives its name to a British revenue district, lying between lat. 32° 10′ 30″ and 33° N., and between long. 73° 20′ and 74° 31′ E., with an area of 2029 square miles, and a population in 1868 of 616,347 persons. There are numerous relics of antiquity in this district, and mounds of ancient construction yield considerable numbers of early coins. General Cunningham has identified one of these shapeless masses, now occupied by the village of Moga or Mong, with the site of Nikæa, the city built by Alexander on the field of his victory over Porus. This mound is about six miles west of the Pabbi range, and has a height of 50 feet, with a superficial dimension of 600 by 400 feet. Copper coins of all the so-called Indo-Scythian kings are found in abundance. While the siege of Multan (Mooltan) still dragged slowly on, Sher Sinh established himself at Ramnagar, on the Gujranwala side of the Chenab, 22 miles below Gujerat, leaving the main body of his army on the northern bank. Here he awaited the attack of Lord Gough, who attempted, unsuccessfully, to drive him across the river, 22d November 1848, and withdrew with heavy loss; but, sending round a strong detachment under Sir Joseph Thackwell by the Wazirabad ferry, he turned the flank of the enemy, and won the battle of Sadullapur. Sher Sinh retired northward, and took a strong position between the Jhelum and the Pabbi Hills. The battle of Chillianwalla followed (13th January 1849). On 6th February, Sher Sinh again eluded Lord Gough, and marched southward to make a dash upon Lahore; but the British-Indian army followed, and on the 22d of February Sher Sinh turned at Gujerat, and the decisive engagement which ensued broke irretrievably the power of the Sikhs. The products of the district are grain, cotton, opium, safflower, tobacco, indigo, goor, wool, and ghi. About half the grain is exported on camels, mules, bullocks, and donkeys, but chiefly by boats to Pind Dadun Khan, and from thence by boat to Multan and Sind. Koftgari, or gold-inlaying in iron, is peculiar to Gujerat, and a very brisk business is carried on by the workmen. Under former rulers, this inlaid work was used chiefly in ornamenting weapons, but, under the peaceful rule of the British Government, the craftsmen now make principally baskets, trays, paper-weights, paper-knives, bracelets, and ornaments.—*Rennell's Memoir*, p. 85; *Cunningham, Ancient Geog. of India*, p. 179; *Imp. Gaz.*

GUJERATI, a term applied to a mercantile race from Gujerat. They are of Rajput origin, and are principally of the Jain religion. See Marwari; Guzerat.

GUJI. HIND. Wheat and barley sown together.

GUJ-PIPAR or Guj-Pipal, according to Dr. Irvine, is supposed to be the root of Borassus flabelliformis, brought from Kābul; is astringent, and is given in medicine to promote digestion; one seer costs two rupees. According to other writers, it is the sliced dried fruit of Scindapsus officinalis, *Schott.*

GUJRA or Sumurrun, bracelets made of coloured thread, worn at the Maharram.

GUJRANWALA, a British revenue district in the Panjab, lying between lat. 31° 32′ and 32° 33′ N., and between long. 73° 11′ 30″ and 74° 28′ 15″ E., with an area of 2563 square miles, and a population in 1868 of 550,576. The Jats number in all 237,600 persons, or 43·15 per cent. of the whole population. Farther north, their fellow-tribesmen have almost all become Mahomedans.

GUL. HIND., PERS. A rose, but compounded with many words to indicate other flowers and flowering plants. Gulab, rose-water; Gulab-pash or Gulab-dan, a rose-water sprinkler; Gulab ka atr, the otto, an essential oil from rose leaves.

Gul, fire-balls for the hookah; a piece of hot charcoal for lighting the pipe or hookah; also the cinder or refuse that comes from a hookah, pipe, or chilam when smoked out.

GULAB SINGH, raja of Jummoo in the time of Ranjit Singh, was a Dogra Rajput, brother of raja Dhian Singh, and raja Suchit Singh. He was cruel, tyrannical, and exacting, but tolerant in religious matters. After the Sutlej campaign, the treaty of Lahore, dated 9th March 1846, left the British in possession of the hill and plain country between the rivers Beas and Sutlej, and of the hill country between the Beas and the Indus, including the provinces of Kashmir and Hazara, and they conferred on Gulab Singh, territories in the hills, and recognised his independence. He began life as a horseman in a troop commanded by jemadar Khushal Singh, then the favourite chamberlain of Ranjit Singh. He soon raised himself to an independent command, in which he distinguished himself by making prisoner Agur Khan, chief of Rajaori. For this service the principality of Jummoo was conferred on his family. He took up his residence in Jummoo, and soon extended his authority over his Rajput neighbours, and eventually into Ladakh. He took an important part in the negotiations which followed the battle of Sobraon. A separate treaty was concluded with him at Amritsar on 16th March 1846, which put him in possession of all the hill country and its dependencies between the Indus and the Ravi, including Chumba and excluding Lahoul, on payment of 75 lakhs of rupees, and in exchange for the Cis-Ravi portion of Chumba. By a subsequent arrangement in 1847, Chumba came again entirely under the British Government. In 1857, Maharaja Gulab Singh died, and was succeeded by his son, Runbir Singh, to whom the right of adoption was guaranteed by sunnud, and the family now hold sway over Kashmir, Jummoo, Kishtwar, Zangskar, Ladakh, and Balti.—*Prinsep's Antiquities by Thomas; Aitcheson's Treatises.*

GULAL. HIND. A red powder, formed of barley flour, or rice or wheat flour, or flour of the water-nut, Trapa bispinosa, tinted with sappan wood or sanders wood, much thrown about in the Ram Naomi and in the Holi festivals of the Hindus.

Gulali are pill-like balls of cosmetic dyes used by women of India, made with arrow-root coloured with alito, and cotton dipped in it is sold in Indian bazars under the name of Pothi. The colour is called also Alaktaka.

Gul-Ambari is a sort of bright lilac, in which the crimson and the blue are not thoroughly combined, so that there is the effect of a shot.

Gul-Anar are the flowers of Punica granatum, of scarlet colour; pomegranate flower.

Gul-Badan is a red silk cloth for Mahomedan ladies' trousers; a striped silk piece.

Guldastah is a bouquet; silver-golden tree decorated with imitations of jewels and precious stones, used at ceremonials and on state occasions as a kind of epergne.

GULANCHA, also Gudancha. HIND. Root and stem of Cocculus cordifolius. It is intensely bitter. A transverse section is very porous and radiated. A decoction is a valuable bitter tonic and alterative; dose, one ounce flavoured with honey, thrice daily. Is the Pachana preparation of the native physician.—*O'Sh.; Beng. Phar.* p. 277.

GULBHANGA. HIND. The flower-bearing or female plant of the hemp. Gulbhanga-i-bihisht, a sweetmeat.

GUL-CHETUR, a famous field at Tanessur, close to the Grand Trunk Road, about 30 miles south of Ambala.

GULERI. HIND. An iron from Gwalior used for wire-drawing.

GULF of AKABAH. The Red Sea at its northern end separates into two branches, the Gulf of Suez to the west and the Gulf of Akabah to the east. Akabah is a continuation of the valley of the Dead Sea and the river Jordan. It is a desolate and deserted sea, useless to commerce, and shunned by the native craft on account of the violent northerly winds which almost constantly prevail there, raising the sea into a deep and turbulent swell.—*Findlay.*

GULF of CAMBAY is about 72 miles long, 30 miles wide at its mouth, and 14 miles at its head. The Nerbadda and the Tapti rivers disembogue into it; and the smaller rivers are the Sabarmati, Mhye, and Dhardur. The mass of alluvial matter brought down by these rivers, and the peculiar action of the tides, has thrown up many enormous sand-banks; the flood-waves come in the form of a bore. At Perim, 26 miles from the entrance of the gulf, the tidal stream is forced through a space four times less than it occupied before; and again, 27 miles farther north, below the Bore Rocks, it flows into a channel only one-ninth its original width, from which circumstances the velocity of the tide is greatly increased. At the head of the gulf, where it separates into the channels of the Mhye river and the Cambay Creek to the east, and into those of the Sabarmati on the north-east, the accumulated waters of the flood-wave assume the form of a bore, the wave coming in perpendicularly. The eastern or principal bore rises five miles to the W.S.W. of Cambay Creek, and is not perceptible in the neap tides, unless the previous springs have been unusually high, when it may be observed slightly through the quarter. It generally commences when the winds begin to lift, the waves increasing daily in height as the tides gain strength, and it is at its greatest height about two days after new and full moon. It also varies with the night and day tide, which differ in height six or eight feet, the night tide both of new and full moon being the highest; as the highest tide must have the greatest velocity, so the wave of the bore will be highest with the greatest tide. At about 14 miles below Cambay, the high springs were found to rise 33 feet. And the flood runs at six miles and the ebb at seven miles an hour. The bore first shows itself in the channel at eight miles below Cambay, as a wave 3½ feet high, with a rate of seven knots. In the first hour the water rose six feet during the first ten minutes. Above Cambay the wave breasts in seven feet high, with a velocity of ten knots. The western bore, running into the Sabarmati river, is almost precisely similar to the eastern bore, but it washes away by its force very large portions of the shore and adjoining sandbanks. In places where the force of the wave is directed to one point, it frequently flows quite perpendicularly, having the appearance of a wall, when it curls and breaks with a thundering roar. In the centre of the channel in the main line of the rush of the bore there is less danger than near the shore, where the wave curls along the banks.—*Findlay.*

GULF of CUTCH, an extensive inlet on the Arabian Sea, running eastward 90 or 100 miles, and separating Cutch from Kattyawar, and terminating at its head like the Kori, in the flat desert of the Runn. At its mouth, between Dwarka and the Cutch coast, it is 30 miles broad.—*Findlay.*

GULF of MANAAR lies between Ceylon and the Peninsula of India, and has a width of 130 miles, extending to the line of islands and banks separating it from Palk's Straits, and a breadth of 200 miles from Point de Galle to Cape Comorin. In the 19th century the British deepened it, to admit ships of greater draught.—*Findlay.*

GULF of MARTABAN is the north-east angle formed by the delta of the Irawadi and the Martaban, Amherst, and Tenasserim coasts. Between Baragu point and Kalegouk island it is 130 miles wide, and recedes to the banks of the Sitang river.—*Findlay.*

GULF of OMAN is the funnel-shaped entrance to the Persian Gulf, included between the province of Oman and the opposite coast of Makran. The south coast of the Gulf of Oman, from the Ruweis ul Jabal nearly to Muscat, is fertile and well covered with date trees. It extends in a wide plain to the foot of the mountains, and increases in breadth from 29 miles at Cape Musendom to 110 miles at its eastern end. From Muscat to Musendom it is 200 miles in length, and within these limits its area is 14,000 square miles. The coast on the Persian side is mountainous, with deep water close to it; but the Arabian coast, excepting the Ruweis ul Jabal mountains, is low, fronted by reefs and shoals to a great distance from the shore for nearly its whole length, forming the celebrated pearl banks.

GULF of PEH-CHI-LI, on the E. coast of China, is at the mouth of the Pei-ho river, and is separated from the Yellow Sea by the Miau-tau group of rocks. The shore is low and flat.

GULF of PERSIA, or Khalij-ul-Fars, is the large inland sea bounded on the N.E. by Persia and on the S. by Arabia. The Persian Gulf, from the coast of Oman to the Basra river, is 450 miles. Inside its breadth varies from 100 to 180 miles, but at its entrance at the narrowest part it is only 29 miles. Within a line drawn due east from Ras Musendom, it comprises an area of nearly 70,000 square miles. The northern or Persian side presents in its whole extent, from the delta of the Euphrates to the Makran coast, a series of rugged precipitous mountain ranges, one behind the other, running nearly parallel to the coast and to each other, and increasing in height as they recede from the sea. A belt of low land of varying width runs between the mountains and the sea, called by the Persians the Garm-sair, hot and uninviting, with a few date groves. The small seaport towns are occupied by Arabs. The southern coast, from the mouth of the Euphrates (Shat-ul-Arab) to the Ruweis-ul-Jabal, is generally of white sand, a perfect desert, with extensive uninhabited tracts. Water scarce and bad, though there are date

groves near villages. The population is exclusively Arab. Along its northern or Persian coast are numerous towns and villages, with a mixed Arab and Persian population; the Arabs are fishermen and seamen, and the Persians are cultivators.—*Findlay.*

GULF of SUEZ, at the N. end of the Red Sea, abreast of Tur, is 17 miles broad.

GULF STREAM of the eastern seas, issues from the Bay of Bengal, passes through the Straits of Malacca, and sweeps to the north along the Asiatic coast, modifying the climate. It is called by the Japanese Kuro-Siwo, and debouches to the Philippine Islands, and thence rushes into the great Pacific, describing an arc of a great circle as far as the Aleutian Isles, on which it leaves strange weeds. The waters of this eastern Gulf Stream are of an indigo tint. The Sargasso weed occupies the centre of the stream.

GULF-WEED (Sargassum bacciferum, *Agh.*), in enormous quantity, floats in an eddy of the Atlantic to the west of the Azores, from lat. 20° to 36° N., and again west of the Bahamas, its utmost eastern limit extending to long. 36° E. It occurs also in the streams in the Pacific. It is of a greenish-yellow colour; is abundant on the reefs, but continues to vegetate as it floats about in the circular currents after it has been torn from its attachment. The masses give shelter to a great number of fish, molluscs, and crustacean animals. Travellers to and from India meet with the Gulf-weed in the Atlantic.

GUL-GAJUBA. HIND. Flowers of gajuba from Bombay; cooling, in various mixed prescriptions. One seer costs two and a half rupees.—*Gen. Med. Top.* p. 136.

GULGEEAN, or Gulguleean, Gulgully, swollen rice mixed with molasses formed into balls.

GULGULA, a town near Bamian, destroyed by Chengiz Khan. From some cause, not now remembered, being highly exasperated with the people, he came upon them suddenly, put them without mercy to the sword, and overturned and demolished the place. There are innumerable excavations or caves in the mountains of the valley of Bamian, which still form the residences of a great part of the population; a detached hill in the middle of the valley is quite honeycombed with them, and is called the city of Gulgula. Caves are in greater numbers on the north side of the valley, where the idols occur, on all sides of which are excavations. It is said that at a day's journey from Bamian, to the south-west, were the remains of an extensive fortress, called Band-i-Berber, erected near a large lake.—*Moorcroft's Travels.*

GUL-i-GULAB, a series of fortresses which have a communication with each other. They are situated near the Persian Gulf, about five farsangs from Behbehan, and the river Kheirabad, the Ab-i-Sherin or Indian river, flows close to the foot of the rock on which they are built, one fort above the other.

GULLAR, a race in the Raichore Doab, with several sections. There are two branches of this tribe, the Adavi Gullar and Gaddha Gullar, about 2000 in number. The Adavi Gullar are dwelling in the villages between Hyderabad and Poona, but a very considerable number dwell in Seroor, 10 miles from Kulburga. They call themselves Gol, from Go, a cow, also Hanam Gol; and they claim to be of the Dhangar or herd race. But the people know them as Adavi Gullar, *i.e.* country or wild Gullar; also as Bai-mandel-wanloo, also Dowai Darman and Dowa dene walay. The men are herbalists, collecting roots and plants for the native physicians; the women beg. Their physical appearance is strikingly like the races from Rajputana,—about the same in colour, but more slender and not so tall. None of them had resemblance to any of the races of Southern India. They speak in Hindi, Telugu, and Canarese. They wear clothes dyed red with red ochre; they seem poor. They do not eat the cow or bullock, but use the goat, sheep, hare, and other creatures; and the village Gullar are goatherds. Like the Baidar, they eat the crocodile. They do not intermarry with the Gaddha Gullar. The Gaddha Gullar dwell in the neighbourhood of towns and villages. The men wear beards, and rear dogs and asses; they hunt wild animals, and eat the jackal, crocodile, porcupine, guana, and the women beg. They are alleged to be thieves and dacoits.

GULLI-MILNA. HIND. Properly Galli-milna. A form of salutation,—the embracing described in Scripture as falling on the neck.

GUL-MEDAK. HIND. Jacinth; but generally understood to be an imitation gem of a deep orange colour.

GULPISTA. PERS. Bazgand., GUJ., HIND. Galls produced on the pistachio tree (Pistacia vera), a native of the south of Europe and of Asia. They are imported in Bombay from the Persian Gulf, and are used in medicine by the natives of India.—*Faulkner; Birdwood.*

GULU or Gooloo. HIND. The pod of the mahwa tree, Bassia latifolia. It yields a very useful oil, and is sometimes eaten by the poorer classes.

GUM.

Gomme, ...	FR.	Gatah pulut, . .	MALAY.
Gom, ...	DUT.	Goma, ...	SP.
Gummi,	DAN., GER., SW.	Pisini, ...	TAM.
Gond, . . .	GUJ., HIND.	Banka, Jigata, . .	TEL.
Gomma, . .	PORT., IT.	Zamk, ...	TURK.

Gums and resins are divisible into gums, gum-resins, and resins.

Gums are soluble in water, but not in alcohol.

Gum-resins, being compounds of gum and resins, are partially soluble in water, partly in alcohol; the gummy matter being separated by one, and the resinous matter by the other.

Resins are soluble in spirits, from which they are in a considerable proportion separated by water. The resins melt on the application of heat, but not so the gums. The chief gum and gum-resin producing plants of Southern Asia are—

Abies Smithiana.
Acacia Arabica.
A. catechu.
A. ferruginea.
A. lebbek.
A. leucophlæa.
A. modesta.
A. odoratissima.
A. serissa.
A. speciosa.
A. sundra.
A. vera.
A. xylopyra.
Ægle marmelos.
Agate grandiflora.
Ailantus excelsus.
A. Malabaricus.
Aloe perfoliata.
Amygdalus Persica.
Amyris commiphora.
Anacardum occidentale.
Armeniaca vulgaris.
Artocarpus integrifolia.
Astragalus, *sp.*
Augia Chinensis.
Azadirachta Indica.
Balsamodendron mukul.
B. agallocha.
B. myrrha.
B. pubescens, *Stocks.*
B. myrrha.
B. Roxburghii.
Bassia elliptica.
B. longifolia.
Bauhinia emarginata.
B. parviflora.
B. retusa.
B. Vahlii.

Bombax heptaphyllum ?
B. Malabaricum.
Borassus flabelliformis.
Boswellia floribunda, *Endl.*
B. glabra, *Roxb.*
B. papyrifera.
B. thurifera, *Colcb.*
Buchanania latifolia.
Butea frondosa, *Roxb.*
B. parviflora, *Roxb.*
B. superba.
Calophyllum calaba.
C. inophyllum.
Calotropis gigantea.
Canarium commune, *L.*
C. strictum.
Cassia auriculata.
Cedrela toona.
Celtis orientalis.
Cedrus deodara.
Cerasus puddum.
Chloroxylon Swietenia.
Citrus aurantium.
C. decumana.
C. limetta, *Resso.*
C. medica.
Cochlospermum gossypium
Cocos nucifera.
Conocarpus latifolia, *R.*
Convolvulus scammonia, *L.*
Cordia Rothii.
Cryptostegia grandiflora.
Cycas circinalis.
Dammara orientalis, *Lam.*
D. Australis.
Diospyros embryopteris.
Dipterocarpus turbinatus.
Dorema ammoniacum, *Don.*
D. aureum, *Stocks.*
Elate sylvestris.
Emblica officinalis.
Eriodendron anfractuosum
Erythrina Indica.
Euphorbia cattimandu.
E. tirucalli.
Feronia elephantum.
Ferula Persica.
Ficus elastica.
F. Indica.
F. racemosa.
Garcinia elliptica, *Wall.*
G. mangostana, *L.*
G. morella, *Desv., var.* pedicellata.
G. pedunculata, *Roxb.*
G. pictoria, *Roxb.*
Gardenia gummifera.
G. lucida.
Garuga pinnata.
Grislea tomentosa.
Holigarna longifolia.
Hopea micrantha, *Hook.*
H. odorata.
Hymanæa verrucosa.
Icica resinifera.
Inga, *sp.*
Isonandra gutta.
Liquidambar altingia.
Macaranga Indica, *Wight.*
M. tomentosa, *Wight.*
M. Roxburghii.
Mangifera Indica.
Marsdenia tenacissima.
Melia azedarach.
Melanorrhœa usitatissima.
Michelia champaca.
Mimusops elengi.
M. kaki.
Moringa pterygosperma.
Morus Indica.
Narthex asafœtida.
Odina wodier.
Opoidea galbanifera, *Don.*
Opuntia rubescens.
Penæa mucronata.
Phyllanthus turbinatus.
Pinus excelsa.
P. longifolia.
Pistacia Atlantica.
P. Cabulica, *Stocks.*
P. Khinjuk, *Stocks.*
P. lentiscus, *L.*
P. vera.
Plumieria acuminata.
Poinciana elata, *Burm.*
P. regia.
Prosopis spicigera.
Prunus alucha.
P. Armeniaca.
P. puddum.
Pterocarpus Dalbergioides.
P. draco, *Linn.*
P. marsupium.
P. Wallichii, *W. and A.*
Punica granatum.
Rhus, *sp.*
Salix capræa.
Salmalia Malabarica.
Sapindus acuminatus.
P. emarginatus.
Schleichera trijuga.
Semecarpus anacardium.
Siphonia, *sp.*
Soymeda febrifuga.
Spondias mangifera.
Sterculia urens.
Stereospermum suaveolens.
Styrax benzoin.
S. officinale.
Swietenia chloroxylon.
S. febrifuga.
S. mahogani.
Syzygium jambolanum.
Tamarindus Indica.
Tamarix Indica.
Terminalia alata.
T. angustifolia.
T. belerica.
T. catappa.
Uncaria gambier.
Vachellia farnesiana.
Vateria Indica.
V. lanceæfolia.
Vatica robusta.
V. tumbuggaia.
Wrightia antidysenterica.
W. tinctoria.
Xanthoxylon hostile.
Zizyphus jujuba.

There are two leading modifications of gum, one of which is represented by gum-arabic, and the other by gum-tragacanth. There are many intermediate varieties, amongst which cherry-tree gum may be distinguished; and the different kinds of gums have been classed under the generic terms of arabine, tragacanthine, and cerasine.

Gum-arabic, gum of the cherry, gum-tragacanth, and others, flow spontaneously from the branches and trunks of the trees producing them. The gummy matter resides in the bark and albumen; it is the nutritive juice of the plant. But as the wood absorbs more moisture from the air than the bark, and hence swells more, in consequence of its enlargement it distends the bark, which by the internal pressure of the wood gives way, and gummy matter escapes.

Artificial Gum.—In the process of calico-printing and for stiffening different goods, an artificially prepared gum has for some years been employed. Starch or fecula is, by the action of diastase—a peculiar azotised substance formed during the germination of seeds—converted into a gummy mucilaginous substance named dextrine. It is also known in commerce under the name of British gum and torrefied starch. The term leiocome has been applied by Payen to a modified dextrine, whiter and more soluble than can be obtained by torrefication. It is formed by moistening 1000 parts of dry starch (potato starch is generally used) with very dilute nitric acid, consisting of 2 parts of concentrated acid and 300 of water. The mixture is divided into small blocks, which, when dried in the air, are rubbed down, and exposed in a proper drying stove to a current of air heated to about 150° or 160°; the powder is afterwards well dried at a temperature not exceeding 230°. When well made, it dissolves in cold or tepid water as easily as gum-arabic.

Gum-Arabic.

Samagh Arabi,	Arab.	Gomma Arabica,	It.
Shu-kiau,	Chin.	Kapitha,	Sansk.
Arabische gom,	Dut.	Goma Arabigo,	Sp.
Gomme arabique,	Fr.	Pisini,	Tam.
Arabische gummi,	Ger.	Banka,	Tel.
Gond,	Hind.		

Gum-arabic is the produce of species of Acacia growing in Arabia, India, Upper Egypt, Senegal, etc. Acacia seyal, A. Ehrenbergii, A. tortilis, A. vera of Africa, all yield the gum-arabic of commerce. That known in commerce as the finer gum Senegal is said to be the produce of A. vera. A. albida (the A. Senegal of Willde.), A. seyal, and A. Arabica also yield it, and the inferior reddish varieties from A. Adansonii. Barberry gum is said to be the produce of A. gummifera.

Gum Senegal is exported from Portendic, Sierra Leone, and the French settlements on the Senegal, being produced chiefly in the desert country to the north of the Senegal. A. vera is stated by the authors of the Fl. de Senegambie to yield the pale and fine varieties, A. albida (A. Senegal, *Willde.*) and A. Adansonii the inferior reddish varieties. A. Seyal, A. vera, and A. Arabica are found in Senegambia.

Barbary Gum is exported from Mogador on the west coast of Africa. It is of inferior quality, and, moreover, a mixture of two or three kinds.

The East India Gum of commerce is the produce of A. Arabica, A. serissa, Ægle marmelos, Feronia elephantum, Azadirachta Indica, Melia azedarach, Odina wodier, and Prosopis spicigera. It is known as Gond, Babul gond, and Ghatti gond. It occurs in rounded pieces or tears, and in fragments, up to the size of a walnut or larger. It dissolves almost completely in water. The solution is purer when made with cold water, and keeps better.

East India Gum is exported to Europe chiefly from Bombay, having been previously conveyed there from the coast of Arabia, and is largely of African origin. Some is also exported from Calcutta and Bombay by the names of Babul and

Ghatti gum, and is of good quality, but is yielded also by Acacia serissa, and by species of other genera.

A gum is also obtained at the Cape from the Acacia karroo, A. horrida, and A. giraffe, and from the A. decurrens of New Holland.

According to the locality producing it, gum-arabic is known as Turkey or Arabic gum, Barbary or Morocco gum, Senegal, East India, and Cape gum. The mucilage of each of these varieties of gum is employed to give lustre to crapes and silks, and for cementing into cakes the various pigments used by artists in water colours.

Cherry-tree Gum, including that of peach and apricot trees and other species of Prunus, resembles inferior gum-arabic in its external characters, but is only partially soluble in cold water.

Mastic Resin is produced in Scio from the Pistacia lentiscus, the lentish tree. That which collects on the branches of the trees is called mastic in the tear, and fetches the highest price, while that which falls to the ground constitutes the common mastic. Mastic varnish is well known from its transparency, and its peculiar toughness and tenacity even when spread in the thinnest coat on wood or on canvas. This is due to the presence of a peculiar resin, which does not possess any acid properties.

Olibanum was the frankincense used by the ancients in their religious ceremonies. Moses speaks of it in Exodus; and it long formed a constituent in the preparation of incense. It is produced in India from the Boswellia thurifera, but there are also African and Arabian varieties.

Myrrh.—This gum-resin was an object of trade more than 3500 years ago. It is produced in various parts of Asia and Africa, one myrrh tree bearing the scientific name of Balsamodendron myrrha. Turkey myrrh is considered the finest, the East Indian being the second in quality. It is employed medicinally as a dentrifrice, and in the preparation of fumigating pastilles.

Tragacanth is gathered in Crete from the Astragalus tragacantha. It is largely employed in calico printing, and has many uses in the arts.

Catechu is an extract rather than a gum, obtained from the Acacia catechu.

Gambier has similar properties to catechu. It is obtained from the Uncaria gambier, and both of these are employed in calico printing, dyeing, etc.

Gum Kino of commerce is obtained from Pterocarpus erinaceus and P. marsupium, and Eucalyptus resinifera. It is used in medicine, and has been proposed to be employed in the arts. The dragon's blood is from P. draco.

Gamboge is obtained in Ceylon, Malabar, Siam, from species of Garcinia. It is much used as a pigment, and in miniature painting it is employed to colour varnishes and lacquers.

Elemi gum-resin is the product of a tree still undetermined, and although it is of considerable importance, and is imported in large quantities, the locality producing it is not distinctly known. It forms an essential ingredient in many of the finest varnishes.

Copal resin exudes spontaneously from two trees, Rhus copalinum, and Elæocarpus copalifer, the first being an American and West Indian, and the second an East Indian tree. A variety of copal is obtained from the coasts of Guinea. The American kind comes to Britain in flat fragments, the East Indian in roundish masses, and the latter furnishes the finest varnishes. Fresh essence of turpentine dissolves it completely, but old turpentine will not do so. It is stated that essence of turpentine, digested upon sulphur, will dissolve double its own weight without letting any fall. The oil of rosemary also dissolves copal with great readiness. An excellent varnish may be made by dissolving one part of copal and one of essence of rosemary, with from two to three parts of pure alcohol.

The employment of the gums and resins in the arts has been greatly facilitated by the discovery of new solvents, such as the new alcohols and ethers, naphtha, benzole, chloroform, and others.

Gum-ammoniac.

Ushek, Feshuk, . ARAB. | Samugh b' sherin, PERS.
Astruck, ... HIND. |

This is a bitter, nauseous, bad-smelling gum-resin, and used in medicine. Dorema ammoniacum, Ferula ammonifera, *Fee*, F. orientalis, and F. Persica, have all been named as its source.

Gum-anime is a gum-resin the product of the Hymenæa courbaril, the courbaril locust tree of South America, introduced into Tenasserim, and easily propagated. This gum-resin is of a pale brownish colour, and is met with in commerce partly in translucent and somewhat unctuous grains or tears, and partly in large brittle masses. But the commercial article is doubtless the product also of the Vateria Indica or gum-copal tree, which yields almost a precisely similar resin. For ordinary purposes these may be used indifferently, but where purity is demanded, copal is almost insoluble, while anime is wholly soluble in alcohol.

Dekamallee is the gum of Gardenia lucida; it exudes in amber-coloured transparent drops at the ends of young shoots, from which it is collected. It is a strong, disagreeable-smelling gum-resin, procurable in most Indian bazars, and much used by native physicians as an external application, when dissolved in spirits, for cleaning foul ulcers. It is also used by some European practitioners in cases of worms in children. It is most useful in preventing vermin breeding in wounds, keeping away flies from sores, on account of its strong aroma; and it is an article in the materia medica of the village farrier. Its effect in preventing the access of flies to festering wounds and running sores is remarkable.

Dammer is a vernacular term for the resins of various trees growing in India and in the Eastern Archipelago. In Bombay the term Dammer is also applied to pitch. Throughout India, Ral and Rala are terms applied to all resinous substances; but the Ral of Northern India, and exported from the Panjab, is not similar to that of the resins of Vatica robusta and of V. tambugaia, which form the chief part of the dammers of India. These are very brittle, and are amber-coloured.

Sal-tree Dammer is the resin of V. robusta and of other species. It occurs in sticks much resembling in shape the black dammer, but differing widely in colour and consistency. In colour it varies from a light yellow to a dark brown, the two colours being very frequently found in the same lump, and giving it the appearance of having a regular 'grain.' It is friable, and differs from the white dammer of the western coast in its inferior hardness, opacity, and its peculiar form,

and from the black dammer in its colour. There are extensive tracts of Gugulam (Vatica) jungles in the Gumsur and Cuttack provinces. The Khond and Uriya races living in and near these jungles, wound trees in several places, the resin issues, and is collected when sufficiently solid. The dammer collected from the decayed parts of the trees is of a dark colour.

Piney Resin of the Vateria Indica is amber-coloured and very tough. It is known as Piney dammer, white dammer of Malabar, Indian copal, and Indian gum-anime. This resin when soft is Piney varnish. It is largely exported from the forests of Travancore and Western Ghats.

Black Dammer of Malabar is the product of Canarium strictum.

White Dammer of Singapore occurs in fragments of variable size, marked with reddish streaks, transparent, amber-like, brittle, with brilliant fracture, very inflammable, inodorous, and tasteless. This resin flows from the Dammara orientalis which grows on the lofty mountains of Amboyna. It hangs from the branches, and resembles stalactites, the pieces being sometimes as large as the hand, and 4 to 8 inches long; some pieces are like anime resin. This substance, in conjunction with wood-oil, makes a useful coarse varnish for doors, windows, etc. It is also sometimes employed as a pitch in dockyards, and by farriers in the preparation of certain plasters. When melted with gingelly oil, it is used for covering corks in bottles.

Cowdie or *Kauric Gum*, called also Australian dammer of New Zealand, is the product of Dammara Australis.

The dammer of the Tenasserim Provinces is the product of three different genera, belonging to the wood-oil tree family,—the Vatica, the Hopea, and the Dipterocarpus.

Gum Elemi of commerce is said to be yielded by several species of Amyris.

Brazilian Elemi is called also Acouchi balsam. It is obtained from the Icica heterophylla.

American Elemi comes from Icica icicariba; resin of courina from I. ambrosica.

Gum Galbanum is referred to Ophoidia galbanifera, *Don*, Galbanum officinale, *Don*, and Ferula galbaniflua, *Buh.* There appear to be two kinds of galbanum, Levant and Persian. The Persian, which is the one which comes to India, is yielded by Ophoidia galbanifera.

Gum-elastic, caoutchouc, or India rubber, is obtained in S.E. Asia from several milky-juiced plants, belonging to different families (Sapotaceæ, Apocynaceæ, Moraceæ, and Euphorbiaceæ). Assam in particular furnishes large quantities of India rubber from Ficus elastica; whilst supplies from Labuan are of the Urceola elastica; and from the Peninsula, of Cryptostegia grandiflora.

Isonandra gutta yields the famous gutta-percha of commerce, which, like India rubber and caoutchouc, rapidly rose in demand after its first discovery, and merchants anxiously look for new sources of supply.

Gum Sagapenum, believed to be the produce of an umbellifer of Western Asia, perhaps Ferula Persica, *Willd.* See Sagapenum.

The *Turpentines* are oleo-resins obtained from coniferous plants. Pinus palustris and P. tæda yield turpentine. Canada turpentine, or Canada balsam, is from the Abies balsamea. Spirits of turpentine is obtained by distilling the crude turpentine. Camphene is the rectified spirit. Turpentine is extensively employed as the solvent of the other resinous bodies in the formation of varnishes. Its solvent powers in this respect render it exceedingly valuable to the artist, and also to the manufacturer. The rectified oil of turpentine has been much used as a solvent of caoutchouc. It has been stated by Bouchardt that the unrectified oil dissolved India rubber with great difficulty, whereas the oil rectified without water was an excellent solvent, but that it was rendered still better when it was distilled from bricks.

Scio Turpentine, called also Chian and Cyprus turpentine, is the product of a Pistacia in the island of Scio. It is obtained by cutting cross-ways with a hatchet the trunks of the largest trees; the turpentine runs down on flat stones placed to receive it, each tree yielding about eight or ten ounces.

The *Oleo-resins* or wood-oils, the Gurjun oils of the genus Dipterocarpus, also the black varnish from the genus Melanorrhœa usitata, are all largely used in the arts and manufactures of S.E. Asia. The export of gums from India during the ten years 1871-72 to 1880-81, ranged in value from £147,336 in the first-named year, to £476,950 in the last. In 1881-82, exports 332,393 cwts., value £294,685. In the eleven years 1850-51 to 1860-61, gum-lac, etc., to the value of from £78,642 to £171,646 was exported, nearly all from Bengal. From 1872 to 1881, the value of its exports ranged from £203,680 in 1873, to £755,748 in 1876.—*Ainslie; Crawfurd; M'Clelland's Tenasserim; Pereira; Royle, Prod. Res.; Eng. Cyc.; Hamilton's Senai, Hedjaz*, p. 278; *Roxb.; Morrison, Comp. Descr.; Mason; O'Sh.; Faulkner; Vegetable Kingdom; Poole; Drury's Useful Plants; Birdwood's Bombay Products; Powell.*

GUMADI. Tel. Gumar, Hind. Species of Gmelina, G. arborea, G. parviflora; Tella gumadi is G. Asiatica. Tagumuda, Gmelina parviflora, is a large timber tree, a native of the mountainous parts of India. The wood of such trees as will square into logs from 18 to 24 inches, resembles teak. The colour is almost exactly the same, the grain rather closer; at the same time it is as light or lighter, and is as easily worked. It is used for the decks of pinnaces about Chittagong, Dacca, etc., and is found to stand the weather without shrinking or warping, better than any other wood known there. It seems to be the Gm. Asiatica. Gm. arborea has a light-coloured wood, close-grained and light, grows in the Santal jungles, but scarce. It is used for planks, and in constructing palkees. It is this wood with which the beautiful lac ornaments are made, such as workboxes, envelope cases, pen-trays, etc., for which Suri is celebrated.—*Cal. Engineers' Journal*, July 1860; *Rohde, MSS.; Roxb.*

GUMATTI. Hind. Mines in Mandi, Kangra Hills, etc., a dirty-grey rock-salt is obtained.

GUMBAZ. Hind. A dome, a mausoleum. The gumbaz covering the tombs of the Adal Shahi kings at Bijapur and Gogi are of magnificent dimensions, and in good preservation. Those at Kulburga are also large, but are greatly dilapidated. Those at Golconda, near Hyderabad in the Dekhan, over the Kutub Shahi kings, are in good order, though of small dimensions. Those over

the Imad Shahi of Berar are remarkable. Over the Barid Shahi of Beder there are large gumbaz, but mostly in ruins; and those at Roza, between Dowlatabad and Ellora, are small and mean in appearance, though the emperor Aurangzeb, who died at Ahmadnaggur, is buried there.

GUM DRAGON TREE of the Canary Islands, the Dracæna draco, affords a concrete, astringent, resinous juice, called dragon's blood. A tree growing at Orotava, in Teneriffe, attained much celebrity. Its hollow trunk had been used from time immemorial by the Guanches for their religious rites. The approximate circumference of the trunk in 1867 was about 78 feet, its height not exceeding 75 feet. It was greatly injured, if not destroyed, by a gale in the autumn of 1867. Gum dragon is a name of tragacanth.

GUM GHATTY, in Bombay, is a commercial term for mixed gums from forest trees, from species of Acacia called Baba, the wood-apple tree, Feronia elephantum, the mango tree, the nim or margosa trees, species of Melia and Azadirachta, the Vachellia farnesiana, the Moringa pterygosperma, and the cotton trees, Cochlospermum gossypium; picked pieces are sold as gum-arabic.

GUMKA. Hind. Slight fermentation of ears of corn, induced to facilitate threshing.—*W.*

GUMPI KAMLU or Kamawaru. Tel. A Sudra caste in Southern India, who do not permit any stranger to enter their houses.

GUMSUR, a hilly tract lying between lat. 29° 40′ and 20° 25′ N., and long. 80° 10′ and 85° 5′ E., in the neighbourhood of Ganjam and Vizagapatam. For a long period after British occupation of the Peninsula, the zamindar held the Gumsur country on payment of rent. The native Chief in 1835 claimed exemption from civil process, also refused to pay arrears of revenue, and the territory was annexed by the British. In 1871 the population of Gumsur was 158,061. It is now a taluk of Ganjam.

GUMTI, a tributary to the Ganges. It rises in a small lake or morass 19 miles east of the town of Pilebhit, in lat. 28° 35′, long. 80° 10′, 520 feet above the sea. It runs S.S.E. into the Ganges, joining 30 miles below Benares, after a course of 482 miles. In the rainy season boats of 4000 or 4200 maunds burden are sometimes seen proceeding down the river to Lucknow. It runs near Lucknow, Juanpore, Sydapur, and near Chougong in Comillal.

GUM TREES of Australia are of several genera. The grass gum trees, Xanthorrhœa, *sp.*, and Kingia Australis, *R. Br.*, plants of Australia, bear some outward resemblance to each other, but belong respectively to the lily and the rush families. The blue gum tree of Tasmania (Eucalyptus globulus) and its ally E. corynocalyx of South Australia, and other species; also Cordyline congesta, Moreton Bay; Seaforthia elegans, Dammara robusta, of Queensland.

GUN. Several of the old cannon in the Peninsula of India are of great size. That with the largest diameter is at Bijapur. It was cast at Ahmadnaggur about A.D. 1549, by a supposed native of Constantinople, named Rumi Khan, also Husain Khan, and the bed of its foundry was still unlevelled in A.D. 1839; it was close to Rumi Khan's mausoleum, which had been converted into a dwelling-house. The gun was dragged to Bijapur by means of elephants and bullocks. Rumi Khan was the Mir-atish, or commandant of artillery, under the Nizam Shah Bhairi dynasty of Ahmadnaggur. The length of this gun is 15 feet, and calibre is 2 feet 4 inches, and a full-grown man can creep into it. It remains on a bastion of Bijapur, and Hindus have besmeared it with red-lead and worship it. Another gun may be seen not far off, on the summit of the high tower called the Oopuri Boorj, measuring 30 feet in length, and composed of bars of iron welded or rather bound together. The legend current regarding the Oopuri Boorj is that one of the kings, wishing to get his city fortified with as little expense to himself as possible, gave each of his nobles a certain portion of wall and rampart to build, and excited the greatest emulation among them as to whose work should be best done. One of the chief nobles was absent at this time, and on his return found the city completely walled in, and his peers rejoicing in their patriotic endeavours. Stung at being excluded from such a grand work, he expostulated with the king, who, to comfort him, promised him that he should build one that would surpass in height and splendour the work of the others. Hence this bastion. A built gun 27 feet long is now lying on the top of Gawilgarh Hill, and one 21 feet long was on the walls of Beder in 1869.

GUNA. Sansk. Merit, virtue; a property, a quality, of which, metaphysically, three are principal.

Satya guna, the property of truth, purity, and wisdom.

Rajo guna, the property of foulness, the source of passion and error.

Tamo guna, the property of darkness, the source of inertness and ignorance.

Nir guna, deity abstractedly, without any of the three properties.—*Wilson.*

GUNA-DOSHA. Maleal. From Guna, good; Dosham, bad. A form of marriage amongst the Nair people; the words mean for better for worse. See Polyandry, p. 109.

GUNCH. Hind. Roots of Abrus precatorius, a substitute for liquorice root. The seeds are used as weights by jewellers, also for necklaces, bracelets, and other trinkets. They are of various colours, red, and red and black, and almost wholly black.—*Simmonds' Dict.*

GUND, a plateau in N. Canara near Dandilli. It has a considerable forest tract, and near Dandilli is a Negro race. There is a succession of small rapids, amounting to a fall of 120 feet, in the Black River, but the timber can be floated down, though not without some difficulty.—*Clegh.*

GUNDA, four of anything. Like the Dan, the Gunda of accounts and the Gunda of practice do not coincide. See Ganda.

GUNDA BAROSA. Hind. Boswellia thurifera resin.

GUNDAL. Sansk., Tel. Cyperus hexastachys, *Rottl.* Wight says the true name is Gundra, a fragrant grass; also a plant bearing a fragrant seed, which, with the addition of La, 'what eate,' becomes Gundala, a name of the Chakor or Perdix chakor, *Gray*, which is said to eat the seeds above mentioned.—*Elliot, Fl. Andhr.*

GUNDGURH. This mountain, prior to British supremacy, was a stronghold of banditti, who infested the high road passing through Husan Abdul to Peshawur. At the foot of one of its northern spurs, opposite to Hurripur, is the

strong village of Murree, where the Sikhs were several times repulsed by the mountaineers, and where Major Abbott found an asylum during an insurrection.—*Rec. Gov. of India*, No. 11.

GUNDICOTA, a town and fortress in lat. 14° 51′ N., and long. 78° 22′ E., between Gooty and Cuddapah. It is on the summit of a precipice, forming the southern wall of a fissure that cleaves a range of sandstone hills from their summit to their base, and the Pennar river passes through the gap into the plains of Cuddapah. The district was ceded to the British by the Nizam in A.D. 1800.

GUNGADHARA. SANSK. From Gunga, and Dhara, to hold. Gungadhara-Shastri, he who knows the Shastra is called a Shastri.

GUNGAPUTR or Gangapootr, a tribe of inferior Brahmans (literally sons of the Ganges), found chiefly in Benares, Bit'hur, and Sheorajpur in Cawnpur.—*Elliot.*

GUNGAVULLY, a river of the plain of Dharwar, rises in lat. 15° 45′ N., long. 75° 10′ E., and runs S.S.W. into the Indian Ocean; length, 100 miles.

GUNGAWALLY and Sadashewghur are shipping ports on the W. coast of India. Gungawally was at one time the chief place of export for Canara timber, consequent on its position nearest to the Mogadda jungle above, and to the south of the Arbyle Ghat.—*Gibson's Bombay Forest Report.*

GUNGHRU, little bells fastened to a string, which is wound round the wrists and ankles, and which jingle at every motion of the limbs.

GUNKARI. HIND. Pewter anklets of Kulu.

GUN-METAL.

Stuck-goed, . . .	DUT.	Metallum tormentorum,	LAT.
Stuckgut, . . .	GER.		
Bronzo, ...	IT.	Metal de canones, .	SP.

It is used for casting statues, cannon, bells, frames, stands for argand lamps, ornaments, etc. Bronze is an alloy of copper and tin, the quantity of tin employed varying according to the effect desired to be produced. Analysis has shown that ancient weapons and tools contained 8 to 15 per cent. of tin, medals from 8 to 12 per cent. tin, with 2 parts zinc added to each 100, for improving the bronze colour. The modern alloys of copper and tin have led to the production of a variety of metals bearing different names, as soft gun-metal, brass ordnance metal, with 8 to 12 per cent. tin, the various bell-metals, and the Chinese gong with 20 per cent. of tin, and speculum metal of 126·4 of copper to 58·9 of tin.—*Tomlinson.* See Alloys.

GUNNERA SCABRA, used for tarts, like the stalks of a species of rhubarb.

GUNNY.

Guni, ...	BENG.	Koni, ...	TAM.
Gunpat, Gunipat, .	HIND.	Gona, ...	TEL.

A strong, coarse sackcloth manufactured largely in Bengal, for making into bags, sacks, and packing generally. The material from which this is manufactured is the fibre of two plants, Corchorus olitorius and C. capsularis, both of which, but particularly the former, are extensively cultivated throughout Lower Bengal. Besides a large domestic consumption of gunny, the whole rice, paddy, wheat, sugar, saltpetre, etc., of the country, as well as the pepper, coffee, and other foreign produce, are exported in gunny bags or sacks. The kind of cloth of which the gunny bags are made is called in Bengal Chata, in Tamil Koni, and in Tel. Goni, also Tat. It is of three different kinds, and was formerly woven in pieces from three-quarters to one cubit wide, of which two or three were sewn together at the sides, into one piece, before offering it for sale. *The first kind*, intended for bedding, is 4 to 5 cubits long and from 2¼ to 3 cubits wide, and sells at about 8 rupees per 100 pieces. *Secondly*, that intended for covering bales of cloth is of the same dimensions, but is thicker than the former kind, and costs from 6 to 10 rupees per 100 pieces. *Thirdly*, that intended for making rice and sugar bags is 5 cubits long and 1¼ or 1½ cubits wide, and ten bags cost 4 or 5 rupees. The exports from British India of gunny bags and gunnies have vastly increased. From 1850 to 1882 they were of the following value:—

1850-51, . .	£158,421	1856-57, . .	£376,253
1851-52, . .	299,720	1857-58, . .	217,092
1852-53, . .	201,667	1858-59, . .	392,424
1853-54, . .	174,926	1859-60, . .	333,977
1854-55, . .	215,346	1860-61, . .	359,043
1855-56, . .	302,340	1881-82, . .	1,097,588

Gunny Bags exported from India.

1874-75 . . .	No. 8,010,824	Rs. 23,36,723
1875-76, . . .	,, 19,258,250	44,28,603
1876-77, . . .	,, 32,859,645	64,64,808
1877-78, . . .	,, 26,406,539	72,96,686
1878-79, . . .	,, 45,354,044	1,04,26,891
1879-80, . . .	,, 55,902,481	1,13,20,504

Gunny Cloths exported from India.

1874-75, . . .	...	Rs. 20,271
1875-76, . . .	...	4,47,542
1876-77, . . .	...	6,94,643
1877-78, . . .	2,965,559 yds.	3,56,100
1878-79, . . .	4,670,691 ,,	5,25,646
1879-80, . . .	5,219,256 ,,	6,08,188

Gunny Rope and Twine exported from India.

	Cwt.	Rs.		Cwt.	Rs.
1874-75, .	5,009	29,404	1877-78, .	4,428	54,431
1875-76, .	1,362	14,632	1878-79, .	2,768	28,298
1876-77, .	4,535	34,759	1879-80, .	2,053	16,754

GUNNYGULL, a hill ridge south of Kurnool, which is seamed with great veins of pure specular iron ore. See Iron.

GUNONG API. MALAY. Literally, fire mountain. There are three volcanoes in the Eastern Archipelago of this name,—one within the circle of the Banda Islands, which is a conical active volcano 2300 feet high. Another is north of Wetta; and the third is near the W. end of Sumbawa, at the northern entrance to the Supi Strait. Gunong Api, north of Wetta, rises six or seven thousand feet above the sea. It is an uninhabited volcano, and is a great landmark for ships trading with China, who pass up the Ombay passage and come down the Flores Sea. Nila is an active volcano 1700 feet high, in the E. Archipelago. It is E. of the Gunong Api that lies north of Wetta. In 1694 a great eruption occurred, part of the crater fell in, the whole island was a sea of lava, and the people fled to Banda; and a similar eruption occurred in September 1824, when all similarly fled.

Gunong Api of the Banda group is called by the French the grenade of Banda. It is a single island or cone of volcanic matter rising from a rocky base, and separated from Great Banda by a narrow channel. Since the Banda Islands were discovered, there have been at least 13 great eruptions of this volcano. That of 1820 was very severe; and another occurred in 1824. The strongest eruptions were in the following years:—1598, 1615, 1632, 1691, 1711, 1749, 1798, 1820. That of 1691 was a terrible one. The most fatal earthquakes took place in 1629, 1683,

1686, 1743, and 1816. Its height is about 2000 feet. It is covered with magnificent vegetation, commencing at the line where the waves cease to beat, and continuing upwards to the point where the lava ceases to flow, being cooled by the air. This volcano is the curse of the group. The nutmeg is not cultivated, and the island is occupied by a few emigrants from Timor.

Gunong Bernum is a lofty mountain 100 miles north of the Lulumut group of the Malay Peninsula. The upper part of the rivers and many of their feeders are occupied by five tribes of aborigines, viz. the *Udai* or *Semang*, who appear to be the same people who are known to the Binua of Johore under the name of Orang Pago, are found on the Segamet, Palungan, and Kapi, tributaries of the Muar, and in the vicinity of Gunong Ledang. The Udai or Semang have not any other weapons than the sumpitan. This is the most savage of the aboriginal tribes that roam the mountains and forests in the centre of the Malay Peninsula, and upon the borders of the Malacca territory.

The *Jakun* partially frequent the same territory, the lower part of Palungan, Gappam, etc., and extend N. and N.W. within the British boundaries. They are found at Tidong, Ayer Chirmin, Ayer Itam, Darat Yassin, Ulu Kissang, and Bukit Singer.

The *Mintira*, the largest tribe, dwell around Gunong Bermun and the adjacent mountains. G. Rissam, Licha, Singwang, Kamuning, Kayu Libet, and G. Garun possess the higher part of both the western and eastern streams.

The *Sakai* succeed to them in the interior, frequenting the neighbourhood of Gunong Kinabui.

On the N.W. the Mintira march with the *Besisi*, one of the most numerous tribes, who occupy all the streams flowing in that direction from Gunong Bermun and the mountains lying to the southward of it.

These five tribes (as well as those inhabiting all the interior of the Peninsula to the north) are sometimes by the Malays called Orang Binua.

Another group are the Bermun tribes, so called from the circumstance of most of the streams on which they are found rising in the Bermun mountain system, receiving accessories from it, or joining rivers which have their source in its ravines.

Gunong Bedong, in the Natunas Islands in the China Seas, in lat. 4° 3′ N., also called Quoin Hill. Another mountain in the Natunas is called Gunong Ranay.

Gunong Gedeh, or the Blue Mountains, a high range in Java, about 30 miles inland from Batavia. Pangeango rises 9954 feet, Salak 7322 feet, and Kanrang 6014 feet above the sea.

Gunong Gedung, about 7000 feet high, is about 30 miles E. by N. ½ N. from Malacca, and is also called Queen's Mount, also Mount Ophir.

Gunong Gerai, also called Quedah Peak, is the highest hill on the Quedah main. Its summit is estimated at 5000 feet above the level of the sea.

Gunong Mar-opi, a sulphureous mountain in Java, 2000 feet high.—*Bikmore; Horsburgh.*

GUNPOWDER.

Ho-yoh, ...	CHIN.	Sandawa, Masiyu,	MALAY.
Krudt pulver, . .	DAN.	Proch, ...	POL.
Buskruid, . . .	DUT.	Porooh, ...	RUS.
Poudre, ...	FR.	Polvora, . .	SP., PORT.
Schiesspulver, . .	GER.	Krut, ...	SW.
Barut, Daru, . .	HIND.	Topalka marindu, .	TAM.
Ubat, Ubat badil,	MALAY.	Mandu, ...	TEL.

Gunpowder is a compound of sulphur, charcoal, and nitre. The sulphur and charcoal in a state of fine powder are mixed with the saltpetre moist as it comes from the refinery. This compound, known as green charge, is long and carefully ground under iron and stone runners. This green charge mixture is then milled into gunpowder under large iron runners, that used for Enfield or Snider for six, and fine sporting powder for twelve hours. It leaves the mill in a state partly of soft cake or mill cake, and partly of dust. These are then pressed into a hard cake at the rate of 70 tons on the square foot, and by the corning and granulating processes it is broken up into the grain, dried and glazed to the form in which it is sold as gunpowder.

The gunpowder made in Madras is sun-dried on a black drying terrace, on which, in 1854, the temperature ranged as under at noon :—

Jan., .	130°–156°	May, .	130°–154°	Sept., .	130°–164°
Feb., .	130 –156	June, .	132 –154	Oct., .	136 –150
March,	136 –154	July, .	150 –160	Nov., .	136 –146
April, .	132 –156	Aug., .	120 –150	Dec., .	96 –120

Sir John Davies is of opinion that the art of printing, the composition of gunpowder, and the magnetic compass had their first origin in China. Gunpowder was known in England in A.D. 1330. A discovery of Augendre, which Dr. Pohl turned his attention to, is an explosive substance composed of 28 parts of prussiate of potash, 23 of cane sugar, and 49 of chlorate of potash. This mixture is white, and may be used as gunpowder; it is lighter than common gunpowder, but its strength is greater in the ratio of 167 to 100 for an equal weight of each, and in the ratio of 129 to 100 for equal volumes. Hence only 60 grammes of white powder are necessary to produce the effect of 100 grammes of black, which, moreover, leaves a residue of 68 grammes, while the former only leaves 31½ grammes. White gunpowder has further the advantage of not heating the gun so fast as the other, because the temperature of its flame is much lower. It is easier to manufacture, less hygroscopic, less inflammable by percussion, and more economical than black gunpowder. In India the charcoal used for making gunpowder is made from the stalks of the Cajanus Indicus. In China it is made from the Cunninghamia excelsa and C. excelsis. Gunpowder Play is the Laab-ul Barut, firing matchlocks in the air in the East to rejoice.—*Davies' China.*

GUNT. HIND. Rent-free lands.

GUNT. HIND. A bill honey or Tartar honey.

GUNTA. HIND. A small tank or small pond.

GUNTA BARINGA. TEL.

Bhui jamb, . . .	BENG.	Sirri-tekku, . . .	SINGH.
Gund barunghi, .	DUKH.	Chirru-dekku, . .	TAM.
Barunghi, . . .	SANSK.	Ghantu bharangha,	TEL.
Bhoomi jombuka, .	,,		

Gunta baringa is the root of a plant growing in the hills about Lamsingi to the W. of Vizagapatam. It is mentioned by Ainslie (p. 112, 1st ed. 4to) under its Tamil name Chiru-dekku. It is used in Southern India by native practitioners as a febrifuge. Ainslie says it is a small, knobby, somewhat warm, and slightly bitterish-tasted root, which the natives prescribe in fever and catarrhs. The Vyteans consider an infusion or decoction of the leaves and tender shoots of this plant as attenuant and diaphoretic. They are said to be slightly bitter and not unpleasant to the taste. Mr. W.

Fergusson of Colombo is of opinion that Premna herbacea, *Roxb.*, is the plant that produces the Gunta baringa.—*Elliot, Flor. Andh.; M. E. J. R.; Ind. Anns.; Med. Sci.*, 1856.

GUNTHER, Dr. A., a learned naturalist. In 1860, Lieut.-Colonel Playfair and Dr. A. Gunther published a work on the fishes of Zanzibar. Dr. Gunther, in addition to all that he had written in the proceedings of the Zoological Society and other journals in the years 1860 to 1868, brought out seven volumes of a Catalogue of the Fishes in the British Museum.

GUNTUR, a town in lat. 16° 12′ N., and long. 80° 20′ E., which gives its name to a revenue district of the Madras Presidency. A hilly tract of 1000 square miles is known as the Palnad, but an extensive plain surrounds the Condaveed range of hills, rising 1725 feet above the sea. The Innaconda hills rise 1920 feet above the sea. Bellumconda, 35 miles N.N.W. of Guntur, is a conspicuous hill on which, as also on the Condaveed hills, are remains of fortresses. The town of Khondinipuram, at the foot of Condaveed, is a place of much sanctity. Arzampatam and Cottapallam are seaports. A raised beach extends from N. to S. from Chinna Ganjam towards the Kistna, and a tradition says the sea once reached that spot, near the town of Chinna Ganjam, and that Europeans traded, in A.D. 1224, to the town of Frangaloodinni, now in ruins. Earthquakes are of frequent occurrence. The Kistna river winds round the Palnad, and at Bezwara it has been dammed by an anicut 3750 feet long, to irrigate 1,000,000 acres in this and the Masulipatam district. Several marine lagoons run along the coast. The Buddhist temple of Amraoti on the Kistna is in ruins. Compact crystalline limestones occur. Guntur was thirteen years subject to British authority previous to the possession of the remaining four districts of the Northern Circars, viz. Ganjam, Vizagapatam, Rajamundry, and Masulipatam; these were acquired in 1765. But by the treaty concluded with the Moghul by Lord Clive, Guntur remained in the possession of Bazalet Jung, the Nizam's brother, to be enjoyed by him as a jaghir during his life, and it was not until the year 1788 that the country was finally transferred to the E. I. Company. In the district of Guntûr, in one year, in consequence of drought, a famine destroyed one-half of the population, and caused a loss in revenue, for ten years, estimated at £800,000. The agricultural population are Teling.

GUNYA, the gnomon, or carpenter's square.

GUPTA, a Sanskrit word meaning concealed or hidden, hence Guptavadhoota, from Gupta and Avadhoota, to renounce. Gupti-Para, from Gupta, and Para, a division of a town.

GUPTA, a dynasty that ruled in India from A.D. 319 to 465. They succeeded to the power of the Andhra. When in the plenitude of their power, the whole of Northern India, with the province of Gujerat, was under their rule, and Samudra Gupta recorded on the Allahabad pillar that the whole of Southern India as far as Ceylon, also Assam and Nepal, were subject to them. About A.D. 465, Skandagupta lost Saurashtra and all their western provinces by the rebellion of his senapati Bhatarka, the founder of the Balabhi family. Two years after this event Skandagupta died, and the Gupta race were dethroned by foreign invaders, supposed to have been the White Huns. The Gupta dynasty were Buddhists, and one of them, Chandragupta II., made gifts to the tope at Sanchi which are recorded on its rail; but their other inscriptions on the lats at Allahabad and Bhitari show a decided tendency towards Brahmanism. The following are tables of the Gupta kings, according to the views of writers who have made them a subject of special study:—

Messrs. Fergusson and Burgess, p. 190.

I. Gupta,	A.D. 318	VI. Kumaragupta,	A.D. 415
II. Ghatotkacha,	335	VII. Skandagupta,	449
III. Chandragupta I.,	355	IX. Mahendragupta,	470
IV. Samudra Gupta,	380	X. Buddhagupta,	470
V. Chandragupta II.,	395	XI. Banugupta,	510

Colonel Cunningham, continuous Series.

I. Gupta,	319	VII. Skandagupta, Kramaditya,	440
II. Ghatotkacha,	340	VIII. Skandagupta, Ladraditya, or Lokaditya,	452
III. Chandragupta I.,	360	IX. Buddhagupta,	480
IV. Samudra Gupta Parakrama,	383	X. Taktagupta,	510
V. Chandragupta II., Vikramaditya,	400	XI. Naragupta, Baladitya,	540
VI. Kumaragupta, Mahendra,	430	XII. Vajra,	570

Professor Lassen, Elder Guptas.

I. Gupta, Cor.	160	VII. Skandagupta, or Kumaragupta,	270
II. Ghatotkacha,	168	VIII. Mahendragupta, and Narayanagupta,	280
III. Chandragupta I.,	195		
IV. Samudra Gupta,	230		
V. Chandragupta II.,	240		

Later Guptas.

I. Devagupta,	400	V. Tathagatagupta,	505
II. Chandrapriya,	435	VI. Baladitya,	530
III. Sakraditya,	460	VII. Vajra,	540
IV. Buddhagupta,	490		

—*Fergusson*, pp. 725-6; *J. R. A. S.*, 1880.

GUPTA VADHUTA, a mendicant branch of the Sakta sect of Hindus. An ascetic Hindu who does not avow his profession of mendicancy, or who observes its practices in secret.—*Wilson.*

GUPTESWARA, a title of Siva.

GUR. Hind., Dukh. Unclarified sugar; raw sugar with treacle or molasses, whether the product of the sugar-cane or of any of the palms; written Goor, also called Jagari. Gur-aku or Gud-aku, tobacco for the hookah, from Gur, and Aku, a leaf.

GUR, an epithet applied to Vrihaspati, Lord of the Bull, the Indian Jupiter, from Gur, preceptor or guardian.

GURÆNDA. Singh. A tree in Ceylon, the wood of which emits an offensive stench. Thunberg stated that it is neither the Sterculia fœtida nor the Anagyris fœtida.—*Tennant.*

GURAKHI. Mahr. A cow-keeper, a cow-herd; from Go, a cow, and Rakhna, to keep, the source of the Gurkha name.

GURAL. Hind. The chamois of Kangra.

GURAN, a Kurd tribe of N. Persia. Ali-Ilahi sectarian belief in Persia is chiefly confined to the genuine Persian tribes of Lak descent, also among the Guran Kurd, and around the higher parts of Zagros. Other Mahomedans accuse them of practising rites at night; and it is generally allowed that they preserve their customs a secret. They make use of wine and spirits, and eat swine's flesh.—*MacGregor*, p. 21.

GURAO. Mahr. According to Wilson, a mixed caste usually employed as the servant of the village temple, sweeping it, and decking the village idol; he is also the village trumpeter. In the Dekhan,

the Gurao is supposed to be the illegitimate offspring of a Brahman with a woman of another caste. They are now in very varied employ.—*Wilson.* See Baluta.

GUR-BATAS, medicinal root of a climber brought to Ajmir from Dehli. Has a bad smell; is considered astringent and cooling; much used in horse mesalih.—*Gen. Med. Top.* p. 135.

GURCHANI, a tribe of Afghans on the N.W. frontier, many of whom live in the hills, and some in the plains. They can muster about 2000 fighting men. Their hill frontage is not more than 20 miles long, but it is intersected by about 30 passes. Towards their southern limit stands the fort of Hurrund, a strong masonry structure, erected by Sawun Mull for restraining them. Near Hurrund is an important pass leading towards Kandahar. Raids of theirs were reported in 1850, 1852; and in 1853 it was proclaimed that any of their hillmen found in the British territory would be seized and placed in confinement. In 1854 their headman entered into engagements to protect the passes, on which account they received an allowance of Rs. 1000 per annum. A section of the Gurchani tribe are termed Lishari, who were always ready to join in forays with the Murree, a more powerful tribe. In 1850 one raid was reported against them; in 1852, one; in 1853, four; and in 1854, four. These raids were not, however, successful. In front of the Gurchani and Lishari hills, and between Hurrund and Mithunkote, are plains inhabited by the Dreshuk, British subjects.

GURDASPORE, a district in the Amritsar division of the Panjab, with 906,200 inhabitants. The town is 44 miles from Amritsar.

GURDEZ, a country between Ghazni and India.

GURDEZI, properly Gardezi, a class of Syuds in Jowlee of Muzaffarnagar. They claim connection with the Barah Sadat.—*Elliot.*

GURGAN, the modern Vehrcan or Hyrcania.

GURGAON, a British revenue district in the Panjab, lying between lat. 27° 39′ and 28° 30′ 45″ N., and between long. 76° 20′ 45″ and 77° 35′ E.; area, 2015 square miles; population in 1868, 696,646. Of these are — Brahmans, 55,402; Bania, 38,214; Gujar, 21,818; Rajputs, 12,867; and Ranghar, 5883. The two last are indolent and thriftless cultivators. The Mina in the Gurgaon district are notorious for their thieving propensities. Devi, under the name of Sitala, as goddess of smallpox, forms the chief object of Hindu worship throughout the district.—*Imp. Gaz.*

GURGHURC \ or Ghurghurya. HIND. The mole cricket, Gryllotalpa vulgaris. See Insects.

GURGUZ, a kind of battle-axe.

GURJARA, the ancient name of the tract between Jambuka or Jambusir on the Nerbadda and the Tapti river. The capital was named by Hiwen Thsang, Pi-lo-mi-lo or Balmer. This is exactly 300 miles N. of the ruins of Balabhi.

GURJA-RASHTRA, also Gurjara or Gujarathi, a name of Gujerat.

GURJI, a Georgian. To say that a Persian lady resembles a Gurji or Georgian, is one of the highest compliments to her beauty. The harams of Persia contain many lovely Circassians.—*Ouseley's Travels*, ii. p. 51.

GURJUN OIL, an oleo-resinous liquid afforded by several species of Dipterocarpus, deep brown, transparent, of nauseous odour, sometimes thick and white. The tree grows with a straight stem to the height of 30, 40, and 50 feet before it throws out branches, which grow horizontally, and produce flowers and seeds during the rainy season. If the seeds fall when there is a breeze of wind, they are carried a considerable distance, but very few of them germinate in a natural state. The oil is obtained by cutting a hole in the tree, about 3 feet from the ground, and about 4 to 5 inches deep, and the base is hollowed out to retain the oil. The whole of the hollow is cleared with fire, without which no oil exudes; after it is cleared, the oil exudes, collects in the hollow at the base, and is removed at intervals. The oil is thus extracted year after year, and sometimes there are two or three holes in the same tree, and the tree does not die. The oil is allowed to settle, when the clear part separates from a thick portion, which is called the Guad. If a growing tree be felled and cut into pieces, the oil exudes and concretes on the stem and ends of the pieces, very much resembling camphor, with an aromatic smell also. It is said that the tree yields from 3 to 5 maunds yearly, *i.e.* 240 to 400 pounds, and the same tree will yield oil for several years. It is a good balsamic medicine, and is very generally used as a substitute for copaiba; but it would be more valuable as a varnish. It is preservative to wood, to which it gives, with little trouble of application, a fine surface and polish; it becomes, however, white and milky if exposed to wet. It can be had in Chittagong in large quantities at Rs. 10 per maund.—*Local Committee, Chittagong.*

GURKHA, a race in Nepal, with broad Chinese or Tartar-like physiognomy, small eyes, flat nose, and meagre whiskers, as well as of stout square make and sturdy limbs. The Gurkha, in every description of costume, and in all degrees of raggedness, are to be seen mingled with inhabitants of Kamaon, Sirmore, and Garhwal. The name is said to be derived from the Sanskrit Goraksha, or from Gao and Rakha, cowkeeper, and that the founder of the dynasty emigrated in the 14th century A.D. from Tirhut.

The present inhabitants of Nepal are the descendants of successive tides of invaders from beyond the Himalayan range, and of fugitives from the plains of Rajputana and of Oudh. But when the Mahomedan invasions of India began in the 11th century of our era, many Hindu princes fled beyond the Terai, to find a safe place of shelter in the valleys and recesses of the country round the sources of the rivers Gogra and Kosi. It is from the alliance of these Hindus with the women of the Gurung, Magar, and other Mongol tribes, that the warlike race of Nepal, the celebrated Khas or Gurkha, is supposed to have sprung. They had been settled at the town of Gurkha considerably to the west of Khatmandu for some centuries before the year 1768, when the crisis in their history arrived. Their chief was on terms of friendship with, and nominally subordinate to, the kings of Nepal. He appears to have taken his share in the defence of the state when Muhammad Taghalaq strove to subject it to his dominion. On this occasion a Chinese army appeared upon the scene, and thoroughly discomfited the invading force. The division of the kingdom into several independent districts by the last of the great princes of the Mal dynasty, about the year 1600, had paved the way for the ultimate success of the Gurkhas, but it was not until more

than a century and a half after this occurrence that the opportunity presented itself. The interval had been taken up by feuds between the rival chiefs or kings of Bhartgaon, Khatmandu, and Lalita Patan, from all of which the Gurkhas had kept studiously aloof. At this conjuncture Prithi Narayan, who claimed descent from the ranas of Udaipur, was chief of Gurkha, and his authority was also recognised in Kamaon and Nayakot. The king of Bhartgaon, hard pressed by his opponents, came to him with a request for assistance, and this Prithi Narayan willingly consented to give. But the Bhartgaon chief soon found that Prithi Narayan aspired to be his master rather than his ally, and the three kings made up their feuds, and opposed the Gurkha invader as the common enemy of all. One capital after the other, however, surrendered to Prithi Narayan. One of the kings was slain on the field of battle, a second died in prison, and the third fled to India. A small force was sent by the Governor-General to their assistance, but was recalled without effecting any result. After Prithi Narayan's death the task of conquering the whole of the country was brought to a satisfactory conclusion by Bahadur Shah, the regent of that ruler's youthful grandson, and from that time down to the present the supreme administrative authority in the kingdom has been in the hands of a regent rather than in those of the king.

Bahadur Shah, the regent, undertook an invasion of Tibet in the year 1791. A Gurkha army of at least 20,000 well-trained soldiers crossed the Himalaya and advanced towards the Sanpu. It captured and plundered Teshu Lumbo, but beat a hasty retreat on the approach of a large Chinese army. The Gurkhas were beaten in several battles, pursued to within sight of Khatmandu, and compelled to acknowledge themselves vassals of the Chinese emperor. The Gurkhas then turned their attention to the districts south of the mountains, when their encroachments in the direction of Sikkim brought them into collision. War broke out between the British and the Gurkhas in 1814, and at first the advantage was with the latter. But Sir David Ouchterlony, during the following year, restored the balance, and in February 1816 a treaty of peace was signed, by the terms of which Nepal was deprived of its more recent conquests, and reduced to its present dimensions. The Chinese sent an army on this occasion to assist the Gurkhas, but it arrived too late. One of the stipulations of this treaty was that the British were to have the right to station a resident at Khatmandu. During the Afghan wars of 1840–42, the resident, Mr. Brian Hodgson, averted a collision at the time when the Sikh question had reached a crisis. On the accession to power, in the year 1846, of Sir Jung Bahadur, who was the great-nephew of the regent, Bhim Sen Tappa, a more friendly attitude was observed towards the British Government, and stanch support was rendered during the Indian mutiny, and was rewarded in 1860 by the cession to Nepal of the Oudh Terai.

Mr. Hodgson, the resident, in the year 1833 wrote a paper on the advantages that would accrue to the British Government from inviting recruits from Nepal. 'The Gurkhas see,' he said, 'in foreign service nothing but the prospect of glory and spoil.' Their individual courage was represented as not more remarkable than their innate sense of discipline. They possess 'all that individual confidence, each in all, which grows out of national victory and success.' They had also a contempt for all the peoples of the plains, whom they styled Madhesia; and Mr. Hodgson specified 30,000 Dakhreah, or soldiers' off the roll, as furnishing a source immediately available. The Nepalese army now numbers more than 100,000 men, and the disapproval of the Khatmandu authorities to too many of their subjects entering a foreign service, have reduced the supply to a very limited extent. Owing to Mr. Hodgson's representations, a Gurkha regiment was included in the contingent force of Shah Shuja for the invasion of Afghanistan. It was practically annihilated in the defence of Charikar towards the close of the year 1841. But after the second Sikh war, the Gurkhas crossed the frontier in numbers to join the regiments which had been named after them, and recruited to a great extent from the hillmen of Kamaon, ceded in 1815. The first, second, and third of these regiments were raised at the time of the war with Nepal, and did good service at Bhurtpur, Aliwal, and Sobraon. They were known originally as the 66th Native Infantry, the Sirmur Rifles, and the Kamaon Battalion respectively. The 4th Gurkhas was raised at a later period; and the 5th, or Hazara Battalion, forms part of the Panjab field force. Wherever there has been fighting on the Indian frontiers ever since the year 1838, these hardy troops have rendered the most valuable service. The whole of the Gurkha force was employed in Afghanistan, and three of their regiments were included in General Roberts' army. The steadiness of one regiment in face of the charge of the Ghazis contributed to the success of the day at Ahmed Khel, and another regiment shared with the Gordon Highlanders the honour of leading the supreme attack on the strong position taken up by Ayub Khan at Baba Wali. Their record of service under the Britith flag is the narrative of untarnished fidelity and unsurpassed valour.—*Egerton's Tour in India; Prinsep's Tibet; Fraser's Himalaya Mountains.*

GURNARD, fishes of the genera Trigla and Dactylopterus, which have their English names from the grunting noise they make when taken out of the water. Two species, D. orientalis of the East Indies, and D. volitans of the Mediterranean, have the fine rays of the pectoral fins connected by membranes, by means of which they can support themselves for some time in the air like flying fish, and are known as the flying gurnard. Species of Exocetus are the flying fish, and a species of Pegasus is the flying horse.

GUROH. HIND. A band or troop of fakirs. Thus there is the Chistiah, Ba-nawa, the Kalandar, etc. Sar-guroh, leader of a band.

GURU. SANSK. Amongst the Hindu, Jain, and Sikh religionists, a teacher, from Gree, to make known: hence, Guru-mukhi, from Guru and Mukhi, belonging to the mouth; Guru-mata, from Guru, a teacher; Guru-prasada, from Guru, a teacher, and Prasada, a favour, grace. Guru Padasraya, in the Hindu religion, the servile veneration of the spiritual teacher. The ten padshah or guru of the Sikh were—1. Nanak; 2. Angad; 3. Amaradas; 4. Ramadas; 5. Arjun; 6. Har-Govind; 7. Har-Kishan; 8. Tegh-bahadur; 9. Harah; 10. Govind Sing. In the Hindu religion

the guru corresponds to an ecclesiastical bishop, and each of the Hindu sects has a superintending guru. These have large incomes, reside in a temple, but make extensive ecclesiastical visitations or tours, accompanied by a band of disciples, who occasionally act as the assistant guru. In popular belief, the guru can work miracles and forgive sins. He can excommunicate and again restore to communion. In his tours he levies contributions from the people of his sect. The Jains have their own guru.

Gurukkal is the head priest amongst the Saiva sect of the south of India. Gurukkal is also a titular appellation of the Moplah Mahomedans on the S.W. coast of the Peninsula of India.

Gurumata, a convention of the chiefs of the Sikh tribes, formerly held at Amritsar, on all occasions of importance.

Gurumukhi, a modification of the Devanagari alphabet devised by the Sikhs; it does not differ in shape, but the forms of many of the letters are interchanged.—*Wheeler, Hist. of Ind.; Wilson.*

GURUHADO. URIYA? A tree of Ganjam and Gumsur; extreme height, 22 feet. Rafters are occasionally made of this wood.—*Capt. Macd.*

GURUNG, a pastoral tribe who are living west of the Magar race, on the slopes of the mountains in Nepal, principally between Jumla and Kirant, at heights of 5000 and 6000 feet above the sea, and found by Captain Sherwill on the higher parts of the Singhaleela range. They breed immense flocks of the Barwal goat and sheep, which they use for carriage. They are of a modified Mongoloid type, and have 42 branches. They use their own language, which is peculiar, but little known, and used by the Buddhist priests to propagate their religion; and they have also learned the Khas language. They have adopted Hinduism, but retain also their former habits and customs. They eat beef, but do not use milk. The religion of the Khas, the Magar, and the Gurung differs only according as it combines a greater or less degree of the Hindu opinions with those of Buddhism. From their energy of character, love of enterprise, freedom from the shackles of caste, pure military habits, and perfect subjectibility to discipline, they are eminently fitted for a military life.

They form a tribe or clan or race in Nepal, and, along with the Kirant and Magar, also of Nepal, form the principal part of the Nepal army. These three tribes are said to differ only in their religion, according as it combines a greater or less degree of the Hindu opinions with those of Buddhism. The Jarya, another tribe of Nepal, south of the Gurung, with whom they are intermixed and intermarry. They are Hindu in creed and manners.

GURU SICHER, a peak on Mount Abu, 5700 feet above the sea.

GURZ, an iron club, pointed at one end, and having a knob at the other covered with spikes. Gurz-mar is an order or guroh of fakirs. The members of it carry a gurz, with which they wound themselves to extort alms. The order is said to have originated with a pir named Sayid Ahmad Kabir.—*Wilson's Glossary.*

GUSHTASP, a Persian king of the Kaianian dynasty, the Darius Hystaspes of Grecian history. He was son of Lohrasb; and the son of Gushtasp was Isfandiar, the Apanda or Astyages of the Greek historians. See Persian Kings.

GUTKULI. MAHR. The thul or field of an extinct family.

GUTTA PERCHA, MALAY, is the concrete juice of the Isonandra gutta, a forest tree of Penang, of the Malay Peninsula from Penang to Singapore, of Sumatra and of Borneo. It is called the Taban tree by the Malays of the Malacca, and in Borneo it is known by the name of Niato. The ch is pronounced like the ch in the English word perch. The tree grows slowly to from 60 to 70 feet high, and 3 or 4 feet in diameter. Its foliage is of a pale green on the upper side, and covered with reddish-brown hairs beneath; it flourishes luxuriantly in alluvial tracts, at the foot of hills, and in such situations, in many places, forms the principal part of the jungle. The natives had discovered its valuable properties before it became known to Europeans. They constructed from it whips, shoes, traces, buckets, jugs, basins, timba or draw-buckets, and vessels of various kinds, and thus attracted attention to the substance, which has since been applied in Europe to a vast variety of domestic and scientific purposes. Their method of collecting the gum, however, has latterly been of the most destructive kind. They fell the trees at once, and by removing strips of bark at intervals, collect indeed a large quantity of sap at one time, but destroy all future supplies from that source. The tree was formerly very abundant, but all the large timber was soon felled. When 20 to 30 years old, it was cut down, and the smaller branches cleared away. Round the bark of the trunk and the larger branches circular incisions are made, at a distance from one another of a foot or a foot and half, and in a few days all the sap dribbles and falls into a cocoanut shell or other vessel placed below. The portions of juice are then collected into bamboo pitchers, and carried by the collectors to boil it, at their huts, in large caldrons, in order to steam off the water which has mixed with the juice, and to clear it of impurities. After boiling, it assumes its marketable consistency, and is brought for sale (Cameron). Pure gutta percha is greyish white, but it is generally brought to market of a reddish-brown hue. This is ascribed to chips of the bark which fall into the sap and give it their colour; but in addition to this there are frequently other matters, such as sawdust, purposely introduced as adulterants. Dr. Montgomerie of Bengal appears to have first noticed the native use of this substance in 1842. In 1843, Dr. d'Almeida presented a specimen of the inspissated juice to the Royal Society of Arts, and described some of the advantages which would accrue from its use. This communication led to no results. But another, made shortly after by Dr. Montgomerie, was most successful, so that by the united efforts of these gentlemen gutta percha was introduced to public notice, and by the year 1858 about 2000 tons were annually exported from Singapore. In 1881, Great Britain imported 3422 tons of it from all places. A very small quantity, comparatively speaking, is to be obtained by tapping.

Dr. Oxley says that gutta ought not to require an elaborate process. The simple boiling in water, and rolling out into sheets, from which all foreign matter can be easily picked off, is the only process he employed, and this, he thinks, would be generally sufficient, if manufacturers in giving their orders would take the precaution of requiring that the

article should be strained through a cloth at the time of its collection; and if they would encourage the natives to do this, by offering a somewhat higher price for gutta percha so prepared, a vast deal of trouble and expense might, in his opinion, be thereby saved. The great peculiarity which makes gutta percha convenient and valuable for a variety of purposes is, that when plunged into boiling water it becomes so soft and plastic, as to be easily moulded into any desired form, and this form it permanently retains on cooling. It was the discovery of this quality which first led the Malays to fabricate it into useful articles.

The juices of various trees have been brought to notice as possible substitutes for gutta percha, but none of them have been found to answer, not even the sap of Euphorbia cattimandu from the Coromandel coast, which at one time was considered a likely substitute. The gutta percha from Borneo is not so much esteemed as that from the Malay Peninsula, and doubts exist as to the identity of the trees. It seems to be a practice with the people who collect the gutta percha of the Malayan Peninsula, to mix the juices of several other species of Isonandra with that of the true Isonandra gutta. And though this mixture confessedly depreciates the value of the gum, as the products of the several species have to some extent similar properties, the adulteration allows the commercial article to be applied to many purposes in the arts, from which the higher price and the scarcity of the true gum gutta would exclude it. There are said to be five or six species of Isonandra on the Koondahs of the Western Ghats of India,—I. Wightiana, I. Perottetiana, I. Candolleana, and I. lanceolata; and in Ceylon are I. grandis, and five other species. Some of these, however, have been referred to other genera, or are synonyms. One in the Peninsula, the I. acuminata, *Wight*, is now referred to the genus Bassia (B. elliptica), which yields the Pachonti, etc. General Cullen brought to notice the Pachonti tree of Malabar, but it was not found of much commercial value. The Dutch Government, while taking measures to transplant and cultivate the Isonandra gutta in Guiana, discovered at Surinam a juice-yielding tree possessed of analogous properties in the Sapota Mulleri, believed to be the same as the bullet tree of the English. It is a tall tree, yielding in the hot season a large quantity of milky juice. The tree grows abundantly on slightly elevated situations. The trunk is surrounded with a ring of clay, with elevated edges, and then an incision is made in the bark as far as the liber; the milky juice flows out immediately, and is collected in the clay reservoir. The juice resembles in some respects the milk of the cow; it forms a pellicle on its surface, which is renewed after removal. By the evaporation of the juice, 13 to 14 parts in 100 of pure gutta percha is obtained. Six volumes of absolute alcohol, added to ten of the juice, separates at once all the gutta percha which it contains. Sulphuric ether acts more rapidly than alcohol. The juice is not coagulated by acetic acid. This Surinam gutta product is sold at Amsterdam at the same price as the best gutta percha of commerce. The coagulated juice of a large climber found by Mr. Sandeman, of Munnipur, in his grant, has been pronounced inferior, inasmuch as it is sticky, and becomes brittle when exposed to cold, and it would be unsaleable in England. A Cachar kind of gutta percha is also brittle, and when dissolved in chloroform or benzole does not dry so quickly as the commercial article. On heating this in water it becomes most ductile and plastic, rather more so than common gutta percha. It is dissolved by the same agents as the latter.

Gutta of Borneo is collected in the Lawas district from at least five species of Isonandra, and adulterated with the juice of Ficus and one or two species of Artocarpeæ.

Gutta Podah of Billiton is vegetable wax.

Gutta Trap of Singapore is the inspissated sap of an Artocarpus, used for birdlime.—*Low's Sarawak; Singapore Cat. London Ex.*, 1862; *Indian Field, Calcutta*, June 12, 1858; *Tomlinson's Dictionary; Burbidge*, p. 75. See Isonandra; Pachonti.

GUTTEAH of Chittagong, a tanning substance obtained from a bush that grows on the sides of creeks and rivers, in low ground which is inundated with the spring tide. It is cut for firewood; and the fishermen and shoemakers purchase it, and take the bark off to tan their fishing nets and leather, and afterwards sell the wood posts for firewood.

GUTWARA, properly Gatwara, but more correctly Gant'hwara, a tribe of the Jat race who hold villages in Gohana (where they are called Aolanea, after their chief town), also in Soniput Bangur, and in the Doab on the opposite side of the Jumna. They trace their origin from Ghazni, from which place they were accompanied by the bhat Bajvaen and the blacksmith Budea, of whom descendants are now living, and are engaged in the occupation of their fathers in the villages of the Gant'hwara fraternity.—*Elliot, Supp. Gloss.*

GUTZLAFF, CHARLES, a missionary of the Protestant Christian religion, who resided in Siam and China. He was acquainted with several Chinese dialects. He endeavoured to spread Christianity amongst them. He was afterwards an interpretor to the British in China, and Consul of Britain. He died about the year 1868. He greatly encouraged the Tae-ping movement. He wrote a Sketch of Chinese History, Ancient and Modern, comprising a retrospect of the Foreign Intercourse and Trade with China, Lond. 1834.

GUWAR. HIND. A hard refractory bean, cultivated in the Dekhan, steeped, and almost entirely used for animals. 100 parts contain starchy matter, 53·89; nitrogenous, 29·80; moisture, 11·75; mineral constituents (ash), 3·16; and fatty or oily matter, 1·40. It is the fruit of the Cyamopsis psoraloides.

GUWO UPAS, or Poisoned Valley in Java, three miles from Balor. It is about a mile in circumference, and 30 to 35 feet deep. Mr. Loudon mentions that on the 4th July 1830, when he visited it, the floor was covered with the skeletons of human beings, tigers, pigs, deer, pea-fowl, and all sorts of birds. A dog thrust into it, in 14 seconds fell on his back, and died in 18 minutes. Another fell in 10 seconds, and died in 7 minutes. —*Jam. Ed. Journ.* xii., 1832, p. 102.

GUZ, also Gaz, a measure of length, a yard. 3 guz=1 gut'ha, and 60 guz=1 jareeb. The Ilahi guz is the standard guz, or yard measure of forty-one fingers, instituted by Akbar. After much controversy respecting its length, it was authoritatively declared by the British Government to be 33 inches long; and the declaration has

been attended with considerable convenience to revenue officers, as a bigha measured by this guz constitutes exactly five-eighths of an acre. Since the middle of the 19th century the guz is generally regarded as the British standard yard of 36 inches.—*Elliot.*

GUZANJABIN, in the province of Kermanshah, is a kind of manna caused by a green fly on the back of the leaf of the dwarf oak. It is very accurately described by Diodorus Siculus. The Persians mix it with flour and sugar, and make it into little cakes, which they consider great dainties, and export to all parts of Asia.—*Ed. Ferrier, Journ.* p. 26. See Gazanjabin; Manna.

GUZERAT or Gujarat, the name given to the northern seaboard of the Bombay Presidency, extending from lat. 20° to 24° 45′ N., and from long. 69° to 74° 20′ E. The term Guzerat is sometimes also employed to include the peninsula of Kattyawar with its 180 pretty states. Guzerat Peninsula has the Gulf of Cutch on its north-west, and the Gulf of Cambay on its south-east. The area of the whole province is stated by Captain Nasmyth to be 31,752 square miles, of which only 10,736 belong to the British Government, in Ahmadabad, Kaira, Panch Mahal, Broach, and Surat, population 2,857,731, the remainder appertaining to tributary chiefs. Anhilwara was the dynastic name of three races that ruled in Guzerat from A.D. 696 till A.D. 1309, when Guzerat was annexed to Dehli by Ala-ud-Din Muhammad Shah. The name of these dynasties was taken from the town of Anhilpur, which rose to great distinction as a commercial site, and with Cambay as its seaport was the Tyre of India. At its height, Anhilpur was 12 cos (or 15 miles) in circuit, within which were many temples and colleges, 84 chaok or squares, 84 bazars or market-places, with a mint for gold and silver coin. Col. Tod thinks it not unlikely that the Chaora, the tribe of the first dynasty of Anhilwara, is a mere corruption of Saura, as the ch and s are perpetually interchanging. The Mahratta cannot pronounce the ch; with them Checto is Seeto, etc. He thinks the Saura princes of Deo and Somnath in all likelihood gave their name to the peninsula of Guzerat. Guzerat was overrun in A.D. 718 by Muhammad-bin-Kasim Walid's general, but when advancing on Chittore he was met by Bappa and totally defeated.

The city of Nehrwalla, says Rennell, the ancient capital of Guzerat, together with the whole of that peninsula, fell into the hands of Mahmud, who died four years afterwards (1028), possessed of the eastern and by much the largest part of Persia, as well as, nominally, of all the Indian provinces from the western part of the Ganges to the peninsula of Guzerat. It was governed by Mahomedans from A.D. 1396 to 1561, as under:—

	A.D.	A.H.
Muzaffar Shah,	1396	799
Ahmad Shah,	1412	815
Muhammad Shah,	1443	847
Kutub Shah,	1451	855
Daud Shah reigned one week,	...	...
Mahmud Shah, Begara,	1459	863
Muzaffar Shah II.,	1511	917
Sikander Shah,	1526	932
Mahmud Shah II.,	1526	932
Bahadur Shah,	1526	932
Miran Muhammad Shah Farukhi,	1536	943
Mahmud Shah III.,	1553	961
Ahmad Shah II.,	1561	969
Muzaffar Shah III.,	1561	969

The lowland of Guzerat resembles that of the Konkan, Canara, the Karnatic, and Orissa, but the interior of the province is mountainous. The alluvial tract is a soil eminently productive, and is occupied by Rajput tribes, Gujar, Kat'hi, Koli, and Kunbi, all claiming a distinct origin. The Koli of Guzerat are descendants of aboriginal tribes who occupied the country before the Aryan conquests. They have long since adopted some parts of Hinduism. In the beginning of the nineteenth century they were a restless, turbulent race, despising agriculture, and living by plunder. Before the middle of the century they had settled down to be peaceful husbandmen, and the state of some of their villages vied with those of the Kunbi. In Guzerat the Kolis are of three sections; the most numerous, the Tullabdah (639,141), then the Puttunwaria, the Kahrez, the Dhandur, and Bhabria. They are in the Baroda district, north to Khyrallu and Massana in the Mahikanta, and form a large portion of the population. In 1883 there were 1,003,287 in Guzerat, Konkan, and Bombay. They are labourers and watchmen; and a few, under the name of Sclottah, form escorts of treasure. The Guzerat Kunbi are a remarkably sturdy, independent race, and will often wrangle for days over a slight increase made in their rent.

The district of Diu is Portuguese, and the town of Diu during the past three centuries has been repeatedly besieged by rulers of Guzerat and the Dekhan, but it has continued in the power of the Portuguese.

The Guzerati language is spoken in the Peninsula by Rajput tribes, Gujar, Kat'hi, Koli, and Kunbi, all claiming a distinct origin. Guzerati is bounded by the Marwari a little to the north of Deesa, to the north and east by the Hindi or Rangri Basha of Malcolm, in Rajputana and Malwa respectively; and in the south it dovetails with Mahrati in the valleys of the Nerbadda and Tapti, ending at Hamp on the former river, and running into the latter. The emigrants from Persia, now known as Parsees, who landed in this peninsula, have adopted the Guzerati language. In the Dekhan, Guzerati is a term applied to any native of Guzerat, but more especially to the traders and dealers from that country. In Bengal and Behar, one subdivision of the Kurmi or agricultural tribe is called Guzerati, having perhaps come originally from thence, or possibly from being of Gujar origin. The Mahratta and Guzerat Brahmans may eat together, but do not intermarry; and the first approach at social union is seemingly to be with the Mahratta and Guzerat Brahmans, amongst whom the influence of European knowledge has had more effect than upon any of all the other races in India. Good seed has fallen on a good soil, and from a body of mendicants, these Brahmans have become active, powerful, and useful.—*Imp. Gaz.*

GUZZELHUTTY, a pass running up a valley in which the Moyar flows to the Bhawani, between Colligal and the Neilgherry Hills.

GWA or Goa, on the Arakan coast, in lat. 17° 38′ 40″ N., and long. 94° 38′ 30″ E.

GWADUR is a village on the north side of Gwadur Bay, at the foot of a range of rocks. The electric telegraph comes overland here to the eastward of the town, and then up and over the peninsula into the sea, and then to Cape Musendom. —*Findlay.*

GWALAGARH, lat. 31° 53′ N., long. 76° 20′ E., in Chamba, near the well-known temple of Jwala Mukhi, about 10 miles N. of Nadaun Fort, is 3231 feet above the sea.—*Mulherran.*

GWALIOR, the capital of the state and fortress residence of the Maharaja Sindia, in lat. 26° 13′ N., and long. 78° 12′ E. The Sindia family came from a family near Satara. The first, 1724, Ranoji Sindia, was an officer in the Peshwa's army. In 1825, Baiza Bai, widow of Dowlas Rao, adopted Jankuji, who assumed the reins of government in 1833. This state is in political relationship with the Government of India, and consists of several detached districts, the principal one being bounded on the north-east by the Chambal dividing it from the British districts of Agra and Etawa. The area of the whole state comprises 33,119 square miles, comprehending part of the ancient province of Agra, and most of Malwa. The population in 1875 was 2,500,000. The people of the north-eastern part of the territory is of a mixed kind, comprising, besides the dominant Mahrattas, Bundelas, Jats, and Rajputs, with Hindus and Mahomedans. There is perhaps no part of India where the tribes of Brahmans are so various and their numbers so great. Gwalior Fort stands on a flat-topped isolated rock of ochreous sandstone formation, nearly two miles long N. to S., and half a mile at its broadest, capped at places with basalt. The face of the fort is perpendicular, and where the rock is naturally less precipitous it has been scarped, and in some portions the upper parts overhang the lower. Gwalior Rock was scaled and taken by Major Popham in 1780. Warren Hastings had sent him with a force of 2400 infantry, with cavalry and artillery, to protect Gohud, sixty miles S.E. of Agra. He captured Lahar, and proceeded to Gwalior. Sir Eyre Coote, commander-in-chief, had pronounced the attempt to capture it an act of madness; but on the night of the 3d August, twenty European soldiers and two companies of sepoys, led by Captain Bruce, scaled and took it without the loss of a single man. It was regarded as so powerful a fortress, that its capture was heard of by the chiefs of India with great astonishment. During the rebellion in Northern India, a massacre at Gwalior occurred on the 14th June 1857, but the town was recaptured by Sir Hugh Rose on the 28th June 1858. The British Indian Government kept a Political Agent at the court of Gwalior, by whom, also, Amjhera, Narwar, Bhadaura, Khaltaun, Sirsi, Raghogarh, Baroda or Sheopore, and Barra, are superintended.

There are several caves in the steepest face of the cliff. The Sas Bahu, a great Jain temple, was excavated about A.D. 1093, and the Teli ki Mandar, originally a Vaishnava shrine, about the same time. In the 15th century, the Jains, on the cliff that sustains the fort, executed the most extensive series of Jaina caves known to exist anywhere. Their style of execution is very inferior. The principal group is in the Urwahi ravine, and consists of 22 colossal naked figures of the Tirthankaras, the largest a standing figure 57 feet high. Another group, on the opposite face of the cliff, has 18 statues 20 to 30 feet high, and there are others.—*Burgess*, p. 509.

GYA. TIBET. A stranger, a foreigner; hence Gya-philang, a Frank foreigner.

GYAING, a river in Amherst district, Tenasserim division, British Burma. It is formed by the junction of the Hlaing-bhwai and Houng-tharaw, near Gyaing village, in lat. 16° 34′ N., and long. 98° 3′ E.—*Imp. Gaz.*

GYAL or Gayal, the land of a deceased Biswadar, lying unclaimed; land coming under the management of the Malgoozar after an Assami deserts his village.—*Elliot, Supp. Gloss.*

GYAL or Gayal, or Mi-thun, the Gavæus frontalis, one of the sub-family Bovinæ, is found in the hilly tracts to the east of the Brahmaputra. See Gavæus.

GYAMI, a Chinese military tribe, a population whose language Mr. Hodgson treats as Sifan.

GYARUNG or Gyarung-bo, a powerful nation consisting of eighteen banners, at present acknowledging the supremacy of China. Each tribe has its special denomination. The name seems the same as that of Gurung, a population in Nepal.

GYILGYD, the Tibetan name of Gilghit, occupying 2500 sq. miles on the right bank of the Indus.

rGYLFO, the title of the ruler of Iskardo, or Little Tibet, derived from two Balti words, rGgyl, powerful, and Fo, a man. The queen is styled rGgyl-mo. Mr. Vigne points to this as the original of the title of Guelph belonging to the royal family of Britain, and of the term Gylfe-koniger, still used to designate the old kings of Denmark.

GYMNEMA, a genus of plants belonging to the natural order Asclepiacæ. 14 species occur in the East Indies. The best known are—G. acuminatum, decaisneanum, elegans, hirsutum, lactiferum, latifolium, molle, Nepalensis, sagittatum, sylvestre, tingens, *var.* cordifolia and ovalifolia Wallichii.

GYMNEMA SYLVESTRE. *Spr.*, *R. Br.* ii. 45.

Asclepias geminata, *Roxb.*	Periploca sylvestris, *Willd.*
C'hoto-doodhi-luta, BENG.	Putla podara, . . TEL.
Poda patra, . . . TEL.	

This grows in the Peninsula of India, Bengal, Nepal, Assam, and Canton.

Gymnema Lactiferum, *R. Br.*, *W. Contr.*

C'hoto-doodhi-luta, BENG.	Kiri hangula, . . PALI.
Ceylon cow tree, . ENG.	Kiri anguna, . . SINGH.

It is a form of G. sylvestre. The appellation Kiri is given because of the resemblance of the juice in colour and consistency to milk. It is a native of Ceylon.—*Roxb.*; *Voigt.*

GYMNEMA TINGENS. *Spr.*

Asclepias tingens, *Roxb.*	Asclepias montana, *Roxb.*

Grows in Sukha, Nuggur, Kamrup, Burma, and Java. Its leaves yield a green dye or sort of indigo.—*Roxb.* ii. p. 49; *Voigt*, p. 538.

GYMNOSOPHI are mentioned by the writers of the time of Alexander's invasion, as a people of India who practised austerities for religion to quell the flesh and its desires. Ælian described them as living in the open air. They are yet daily to be seen in various parts of India, sometimes without any covering, or with only a narrow strip of cloth, their bodies covered with ashes, exposed to the elements, and continuing to live as anchorites through a long life under the most painful circumstances. Menu (Institutes, 6, 22) says, 'Let the devotee push himself backward and forward on the ground, or stand on his toes the whole day, or continually sit down and rise again; let him go into the water at sunrise, noon, and sunset, and bathe; in the hottest season of the year, surround himself with five fires; and in the winter stand constantly in a wet garment; and so

let him proceed ever, continuing his penances in severity.' Their present representatives are the Viragi and Sanyasi. In the Ramayana they are represented as lying in winter in cold water, living on dried leaves and water. Colonel Wade and Captain Osborne were witnesses to the interment alive, and disinterment, of a devotee at Lahore in 1837, who was buried for six weeks in a closed chest. It was suspended in a vault to avoid the attacks of white ants. The seal of Ranjit Singh was on the tomb. The systems of Hinduism and Buddhism encourage austerities; and the reformers Sakhya Sinha, Kabir, Ramanand, and Chand all favoured it. The idea seems to be connected with the prevailing belief as to transmigration, leading to the infliction of self-torture as penance for the sins of the former or present existence, in the hope of absorption after the present term of life. The austerities are practised in the most varied form, from simple abstaining from marriage, to temporary or life-long tortures and voluntary suicide by drowning, burning, placing themselves beneath the great wheels of idol cars. The tortures at the Holi festival, the deaths in the Ganges and at the Jaganath car, the prostrations for a pilgrimage around the hill of Govardhan, are of this kind; and in 1866, a Hindu ascetic was sitting in a cave at the editor's visit to Ellora, where he was said to have sat for five years.

GYMNOSPORIA SPINOSA. *H. f.*

Badlo, ...	Beas.	Parmiaun, . . .	Ravi.
Li, Kamla, . .	Chenab.	Kadewar, . .	Sutlej.
Kandiari, . .	Jhelum.	Suragh-zai, . . .	Tr.-S.
Lap, Pataki, .	Kangra.	Kharazya, . . .	,,

A shrub with strong spines; common Trans-Indus, in Salt Range to 5000 feet, and to 3500 feet in the low valleys of the Outer Himalaya. The smoke of the seeds is said to be good for toothache.

GYMNURUS RAFFLESII of Borneo, resembles a cross between the pig and polecat.—*Wall.* p. 39.

GYMODACTYLUS, a genus of reptiles, of which the following are known in India, viz.:—

G. triedrus, *Gthr.*, Ceylon.	G. Malabaricus, *Jerdon*, Malabar.
G. pulchellus, *Gray*, Penang, Singapore.	G. littoralis, *Jerd.*, Malabar.
G. frænatus, *Gthr*, Ceylon.	G. Deccanensis, *Gthr.*, Dekhan.
G. Kandianus, *Kel.*, Ceylon	G. variegatus, *Blyth*, Moulmein.
G. Mysoriensis, *Jerdon.*	
G. Indicus, *Gray*, Neilgherries.	

GYNANDROPSIS PENTAPHYLLA. *D.C.*

G. affinis, *Blume.*	Cleome pentaphylla, *Linn.*
Shada hurburija, . Beng.	Valle kire, . . . Tam.
Kamala, Kat koduku, ,,	Nai kaduga, Nai vella, ,,
Kara vella, . . Maleal.	Vaminta, ... Tel.

An annual flowering plant of the order Capparidaceæ, grows in the East and West Indies and America. The leaves of the wild plant are eaten in curries; bruised and applied to the skin, they act as a rubefacient, and produce a very abundant serous exudation, affording the relief derived from a blister, without its inconveniences. This freedom from inconvenience is not, however, always experienced. Dr. Wight once saw extensive vesication produced, by the application of the leaves of this plant as a discutient to an incipient boil. The previously existing inflammation of the skin probably gave rise to this extensive action. This and other species are very pretty, and grow well in a light rich soil. The colours of the flowers are white, red, purple, and yellow. At Lahore, the seeds are used by the hakims in convulsions; those of Cleome viscida are said to be anthelmintic.—*Honigb.; Roxb.; Voigt; Riddell; Jaffrey; Wight, Ill.*

GYNOCARDIA ODORATA. *Lindley.*

Chaulmoogra odorata, *Roxb.*

Talien-noe, . . . Burm.	Petar kura, . . . Hind.
Ta-fung-taze, . . Chin.	Chaulmoogra, Hind., Per.

This is a native of Sylhet, is met with on the banks of streams in the Toungboo forests, and also throughout India generally. It grows to a size equalling the large-size mango tree. When full grown it may be compared to the great maple or sycamore, Acer pseudo-platanus. It blossoms in April and May, and the seed ripens at the close of the year. When the fruit is gathered, the seed is carefully taken out, dried, and sold to the native dealers in drugs, at about five rupees the maund of 84 lbs. Its seeds are medicinal, and have been recommended for tapeworm; and an ointment prepared from them is a favourite application among native practitioners for the treatment of several cutaneous diseases, especially herpes and tinea. The seeds, Ta-fung-taze, Chin., are used by the Chinese in leprosy, syphilis, lipoma, and worms. The seeds are sold in the bazars in India, at about 13s. 4d. per cwt.; they yield by expression about 10 per cent. of a thick bland fixed oil, having a peculiar smell and taste. They are various in shape, nearly oval, smooth, grey, hard; embryo, white. For external application, they are beaten up with ghi or clarified butter, and applied to the diseased cutaneous surfaces three times daily. The expressed oil is prized in the treatment of leprosy in India, also in scrofula and phthisis. The surfaces of the ulcers are dressed with the oil, while a six-grain pill of the seed is given three times a day. The dose of the latter is gradually increased to twice the original quantity. One drachm given to a dog caused violent vomiting in 15 minutes. The expressed oil is sometimes given internally, in doses of five or six minims. Too large doses are apt to produce nausea and vomiting. Its wood is adapted for fancy work and cabinet-making.—*Roxb.; Ed. New Phil. Mag.*, 1856; *O'Sh.; M'Cl.*

GYPSUM. Shih-kau, Si-li-shih, of the Chinese, is a native sulphate of lime. It occurs as selenite, plaster-of-paris, alabaster or snowy gypsum, radiated gypsum, and satin spar or fibrous gypsum. Extensive beds of crystalline and fibrous gypsum and selenite occur near Ennore, the Red Hills, Ootatoor, Nellore, Tiagur, Madura, Bangalore, Sadras, Masulipatam, Hyderabad, and other localities. It can be purchased in most bazars in India under the name of Kulnar and Karpoora silasit, and is used in small doses as a medicine; but the natives do not appear to be acquainted with its use in taking casts, plastering, and house decoration, or in manufacturing Keene's cement. It occurs very abundantly in the Madras Presidency, in the form of fibrous and crystalline gypsums, both free from carbonate of lime, and well suited for the manufacture of plaster-of-paris for moulds, busts, statues, or ornaments.

Gypsum of great purity was described by Dr. Jameson as occurring at Jalalpur, recommended for public buildings and ornamental works. In the western parts of Marwar are extensive rocks of earthy and granular sulphate of lime. Selenite occurs in various places in Kattyawar, and at Dholgaon in the Rajpipla country. Granular gypsum is found near the banks of the Tenasserim, in

about lat. 13° 40′ N. A fine variety of fibrous gypsum (Sha-koung, CHIN.) is brought to Burma from China. They use it in medicine, and say it is very cooling. This occurs in China, in the districts of Hu-peh and Yun-yang-fu, Sze-chuen, Yun-nan, and Shan-tung. Gypsum is brought to Canton in abundance from the N.W. of the province, and is ground into powder in mills. It is not used as manure by the Chinese, but is mixed with oil to form a cement for paying boats after they have been caulked. The powder is employed as a dentifrice, a cosmetic, and a medicine, and sometimes also is boiled to make a gruel in fevers, under the idea that it is cooling. Its employment in colouring tea and adulterating the Ping-fa, or powder sugar, is attributable to other motives than a wish to injure the consumers.

Gypsum is named from γῆ, earth, and ἵψειν, to concoct, *i.e.* formed or concocted in the earth. The better sorts of Derbyshire gypsum are employed in the Staffordshire potteries, as an ingredient in certain kinds of earthenware and porcelain, and also in making moulds for such articles of pottery as cannot be shaped on the common wheel. The finest pieces of this gypsum are reserved for ornamental purposes, such as vases, small statues, etc., of which a considerable manufacture exists in Derby. Gypsum in this form generally bears the name of alabaster; gypsum, when calcined and reduced to powder, can be brought to a pulpy mass by admixture with water, and is the well-known plaster-of-paris. This mass very soon sets, or returns to the solid form, giving out, while in the act of doing so, a considerable degree of heat. Advantage is taken of this in the use of gypsum as a material for casting and taking impressions.

A white granular gypsum, suited for sculpture, occurs in the Jummoo territory, and an alabaster from Spiti is a hard white granular gypsum. Gypsum occurs in the marl beds of the Devonian or primary strata of the Salt Range. In the gypsum of Mari, Kalabagh, and Sardi, beautiful regular quartz crystals occur, called Kalabagh and Mari diamonds. They are transparent, milky, or red. The Bohemian topaz of the Jhelum consist of small crystals of this quartz, in the form of dodecahedra, or double six-sided pyramids, but there is not the six-sided prism so characteristic of quartz. The Kalabagh diamonds are quartz in six-sided prisms, terminated by six-sided pyramids.

An inferior alabaster occurs at Sardi and on Karuli mountain, erroneously called marble. Lahore gypsum is called Sang-i-jarahat, also Godanti; that of the Jhelum and Rawul Pindi is called Surma safed, a name usually applied to the carbonate of lime Makol.—*Powell's Handb.; Mad. Ex.*, 1857, *Jur. Rep.; Simmonds; Tomlinson; Mason; Williams' Middle Kingdom; Smith.*

GYPSY.

Ghajar, Ghajari, . ARAB.	Asinghan of Middle Ages.
Mazini of . . BOKHARA.	Cigani, MOLD., SERV., SCL.
Tartar, Tatar, DAN., NOR.	Kara-chi, Kara-shmar, PER.
Heidenen (idolators), DUT.	Luri, Luli, Lohari, ,,
Egyptien, Bohemien, FR.	Kauli, ... ,,
Ziguener, . . . GER.	Cygana, Ciganos, . PORT.
Atinghan, MODERN GREEK.	Tezengani, Tzingani, RUS.
Nat'h, Beria, Kanjur, HD.	Caird, Tinker, . SCOTCH.
Cingany, Cygani, . HUNG.	Ginano, ... SP.
Czygai, Tzyani, . ,,	Spakaring, ... SW.
Pharaoh-nepek	Ricinari, Nuri, . . SYR.
(Pharaoh's people), ,,	Chingana, . SYR., TURK.
Zingari, ... IT.	Tziaghi Bucharest, ,,
Zingaresco (language), ,,	Bessarabian, . WALLACH.

They call themselves Rom, Romani, Roumna-chal, or Rāmna-chāl, two Hindi words, meaning field-walkers. Their primitive name is said to be Tzengari.

Gypsies did not leave India before A.D. 1000. They entered Europe through Greece, were in Crete in 1322, in Corfu in 1346, and in Wallachia in 1370. Who are their Indian remnants, if any, is very doubtful; but Nat'h, Bazigar, Dom, Korawa, and Yerkal have been named, and in Persia and the Turkoman country, the Kauli and Kara-chi. Their number amounts to about five millions, half a million being in Europe. But races with similar habits are found throughout Northern Africa and great part of Central, Southern, and Eastern Asia, ostensibly working as tinkers, smiths, farriers, dealers in horses, and naturally familiar with them; without religion, unscrupulous thieves; women, fortune-tellers, especially by chiromancy; eating animals which have died a natural death; flay animals, carry corpses, make mats, baskets, and small articles of wood; show great skill as dancers, musicians, singers, acrobats; and there is hardly a travelling company of such performers, or a theatre in Europe or America, in which there is not at least one person with some Romany blood. Their hair remains black to advanced age, and they retain it longer than do Europeans or ordinary orientals.

The gypsies of Bokhara and on the banks of the Zar-afshan river chiefly dwell in tents made of biaz, a coarse cotton stuff. The gypsies in the N. parts of Persia lead a wandering life, but always aloof from the other erratic tribes; and they go by the name of Karachi, from the Turkish work Kara, meaning black. They exercise the trade of tinkers, and are consulted at times as horse doctors; but they are in general looked down upon by the inhabitants settled in towns and villages, and even by the other wandering tribes. In Kermanshah and Kurdistan, where their number is very considerable, they also lead a vagabond life, and are known by the denominations of Susmani and Kauli. In Ardelan, which is the Persian Kurdistan, there is a large village near Senneh inhabited solely by the Susmani. Their women are like the Indian Bayadere, and dance at the Persian majālis or assemblies, to the music which their husbands perform on some stringed instruments. There are several Iliyat tribes in Persia, the sound of whose names bear some resemblance with Zigane. These are the Zengheneh, once a very considerable, and until now reckoned a very noble, Kurdish tribe of Kermanshah. A branch of them was also transplanted by Nadir Shah into Luristan, where another tribe of the same name of Zengheneh, though of Lurish origin, is established.

A singular class of wanderers, known by the name of Mayadds, visited Lahore in 1868. They spoke a peculiar language among themselves, though when within earshot of Europeans and Indians they spoke Persian. The Mayadds were always armed on reaching the Indian frontier, a fact for which they accounted by saying that they were Shiahs, whom the Sunni sect sometimes manage to sell as slaves. 'When,' says Dr. Lietner, 'I visited their encampment, their frantic gesticulations, and the hurling of children by one woman to another in order to emphasize her rage, reminded me of a scene recorded in my account of the gypsies of Turkey, . . . when a case was decided in favour of that side in a tribal contention, which could dance

most obscenely and use the strongest expressions whilst advocating their own cause.' Others of the same tribe appear to have visited Lahore in 1870.

In a work on Bokhara, Mr. Khanikoff alludes to three tribes established there, which, he thinks, belong to the gypsy race. They are called Jughi, Mezeng, and Luli; and though outwardly professing Mahomedanism, seem to have no religion at all. General Ferrier mentions that the gypsies in Persia lead a wandering life; each band is independent; they preserve their own ideas of caste as a peculiar people, and with them the dirtiest habits; live upon next to nothing, and detest a regular life and a fixed place of abode. There are more than 15,000 families of gypsies dispersed over various provinces of Persia, paying a heavy tax to the Government. They are called Kauli, also Fal-sen, or fortune-tellers; also Kalbir-band, or sieve-makers, because this is their principal occupation; these, their wives, who do not hide their faces, sell from door to door. General Ferrier at Rubat Abdullah Khan came on a camp of Kal-bir-band gypsies, and the moment they perceived the travellers they called off their dogs, who were replaced by the women and children, vociferous for alms. It was impossible to proceed a step, for they hung on the legs, clothes, and bridles of the travellers, and completely hampered them; they were absolutely forced to comply with their clamorous demands. The women had sunburnt complexions; they were tall, with finely developed forms, which they cared as little to conceal as they did their faces. The men were seated at a little distance, making sieves, and apparently quite unconcerned about the proceedings of their wives. These gypsies had the same wandering instincts like all others he met with in Asia.

In Egypt, the men are mostly blacksmiths, braziers, and tinkers, or itinerant sellers of the wares which are made by others of this class, particularly of trumpery trinkets of brass, etc. Some gypsies also follow the occupation of phail-wans or gymnasts, performing feats of strength and dexterity. Many of the women are fortune-tellers. They dress like the females of the lower class, but always go about the streets with unveiled faces. Their cry is, 'I perform divination.' Some of these gypsy women also cry, 'Nedukk-wa-n'-tahir!' We tattoo and circumcise.

Professor Sayce says (ii. p. 76) that the gypsies passed successively through Persia, Armenia, Greece, Roumania, Hungary, and Bohemia, whence they dispersed towards Germany, Poland, Russia, Scandinavia, Italy, Spain, England, and Scotland. The later researches of Potts, Miclosich, and others leave no doubt as to the Indian origin of the gypsies. Many of the individual words are identical in Gypsy and Hindustani; but the grammar of the first-mentioned language, as shown in the mutilated form which remains in English Romany and the more perfect system of the Turkish Chingiané, is quite different from most of the modern vernaculars of India, and has but few points of contact with the older dialects. Somewhere about the year 420 A.D., a number of strolling minstrels did find their way into Persia; they were called Lūri, and are described by Firdusi in terms which might equally well apply to a band of English Romanies. The word Lūri is still used in Persia for strolling minstrels and vagabonds; and, under the form Nuri, it is the generic appellation of gypsies in Syria and Egypt. Arab historians speak of these people under the alternative name of Zutt, which is with much reason believed to be a corruption of Jat. Gypsies in Europe are perhaps the only race who will eat animals that have died a natural death. Mullo baulo, or 'dead pig,' is their favourite delicacy.

In 1844, three years after the appearance of Borrow's Zincali, or Gypsies of Spain, Dr. A. F. Pott, of Halle, issued a work, entitled Die Zigeuner in Europa und Asien. Later on, Professor Miclosich of Vienna published in parts an exhaustive treatise, Ueber die Mundarten und die Wanderungen der Zigeuner Europas; and in 1870 Dr. Paspati published, in French, at Constantinople, a magnificent monogram on the language and literature of the Turkish gypsies, with the title Etudes sur les Tchingianés. The Romany language is spoken with the greatest purity by the gypsies of the Ottoman empire. M. Paul Bataillard has also made a valuable contribution towards the ethnology and history of the Romany race, in his l'Apparition des Bohémiens en Europe (1844). Of those who have followed Borrow in his investigations of the English gypsy dialect and traditions, the most noteworthy are Mr. Charles G. Leland (Hans Breitmann), Dr. Bath Smart; and Dr. Smart's Dialect of the English Gypsies. A volume of ballads in Romany and English was compiled jointly by Mr. Leland, Professor E. H. Palmer, and Miss Janet Tuckey.—*Lane; Ferrier's Journ.; Pottinger's Travels; De Bode's Travels; Peschell; Sayce*, p. 76.

GYPSY APPLE. Popowich speaks of the gypsy apple as a small black fruit unfit to be eaten. A fruit was shown to Baron de Bode in the forests of the Zagros mountains, on the road from Kermanshah to Baghdad, called by the natives Angur-i-Kauli. It grows on the mazu or gall-tree, of a yellowish transparent colour. On account of its glutinous property, is sometimes used as glue.

GYRINOPS WALLA. *Gærtn.* Walla, SINGH. A very elegant little tree, common about Badagam, near Galle, and the warmer parts of the south of Ceylon. The bark yields a very strong fibre.—*Beddome, Fl. Sylv.* p. 303.

GYROCARPUS JACQUINI. *Roxb.*

G. Americanus, *Jacq.*
G. Asiaticus, *Willde.*
G. acuminatus, *Meisn.*
G. sphenopterus, *R. Br.*
G. rugosus, *R. Br.*

This tree is widely distributed throughout the world. It is called Tanaku and Kamar pulki in Telugu, and Zaitun in Hindustani. The wood is very light, soft, and white, and is much used at Condapilly, in the Northern Circars, for making light cavadie boxes and toys, and it takes paint and varnish well. It is also preferred before all other woods for making catamarans; necklaces and rosaries are made from the seed.—*Roxb.*

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